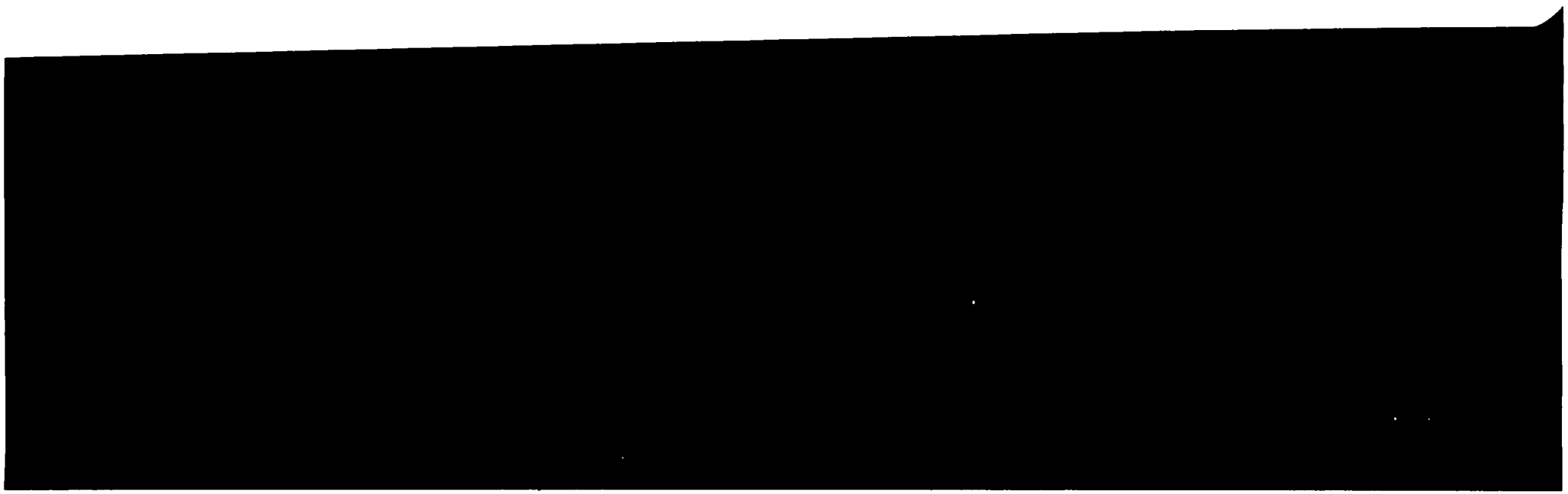
Release in Full

Management Practices



MURPHY CORPORATION

EAST POPLAR UNIT WELL NO. 17

C SW SW Section 2, Township 28N, Range 51E
Roosevelt County, Montana

Elevation 2211' KB

MURPHY CORPORATION

East Poplar Unit Well No. 17

LOCATION:	C SW SW Section 2, Townhsip 28North, Range 51East Roosevelt County, Montana
ELEVATION:	2200' Ground: 2211' RKB.
SPUDDED:	February 24, 1953.
COMPLETED:	March 26, 1953.
TOTAL DEPTH:	5905' Driller; 5908' Schlumberger; 5903' Casing; 5907½' Lane-Wells.

HISTORY

February 24:	Spudded and drilled to 173' with a 12½" bit.
February 25:	Drilled from 173' to 1040'. Ran Schlumberger E.A. from 100' to 1040'.
February 26:	Set 1018.93' of 9 5/8" casing at 1031.93' with 400 sacks of Ideal Bulk cement; bumped plug with 950#; released pressure; held o.k. Plug down at 11:35 A.M.
February 27:	Waiting on cement.
February 28:	Drilled plug at 2:30 P.M. Drilled from 1040' to 1283'.
March 1-3:	Drilled from 1283' to 3543'. Twist off at 3260'.
March 3:	Went in hole with overshot and recovered fish. Drilled from 3543' to 3785'.
March 4-15:	Drilled from 3785' to 5615'.
March 15-16:	Cut and pulled Core No. 1 from 5615-5650, recovered 35 feet.
March 16-17:	Drilled from 5650' to 5727'
March 17-18	Cut and pulled Core No. 2 from 5727-5764, recovered 37 feet.
March 18-20:	Drilled from 5764' to 5880'.
March 20"	Cut and pulled Core No. 3 from 5880-5908, recovered 28 feet.
March 21:	Ran Schlumberger E.S. and Microlog.
March 22:	Set 5856.95' of 5½" casing at 5890 with 300 sacks Pozmix with 2% gel. Plug down at 7:15 P.M..
March 23:	Waiting on cement.
March 24:	Well undergoing completion operations as set forth under "Completion Data".

HISTORY OF OIL OR GAS WELL

16—43094-1 U. S. GOVERNMENT PRINTING OFFICE

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

Spudded at 8:00 P.M., 2-24-53. Drilled to 1049, and ran Schlumberger E.S. Set 1018.93 feet of 9 5/8" casing at 1031.93. Cemented with 400 sacks of cement. Plug down at 11:35 A.M., 2-26-53. Started drilling cement plug out from under surface casing at 7:30 P.M., 2-28-53. Drilled to 5615'. Cut Core No. 1 from 5615 to 5650, recovered 35 feet. Drilled to 5727'. Cut Core No. 2 from 5727 to 5764, recovered 37 feet. Drilled to 5880'. Cut Core No. 3 from 5880 to 5908, recovered 28 feet. Ran Schlumberger E.S. and Microlog. Total Depth: 5908' Schlumberger equals 5905' Driller equals 5903' Casing. Ran 180 joints (5878') 5½" casing, landed 12' below RKB. Cemented with 300 sacks of Pozmix "A" cement, 14.0#/gallon slurry. Bumped plug with 1200#; released pressure. Held O.K. Plug down at 2:00 A.M., 3-22-53. Drilled cement plug and ran LANE-WELLS Gamma Ray and Neutron Logs. Total depth: 5907' LANE-WELLS. Perforated B-1 Zone from 5738-5746 with 4 jet shots per foot. Perforated B-2 Zone from 5755-5764 with 4 jet shots per foot. (Lane-Wells measurement). Set Baker Model "D" Production Packer at 5870' on LANE-WELLS wire line. Ran 180 joints (5835.43') of 2 3/8" tubing; landed 10.20' below RKB. Acidized B Zones through perforations, 5738-5746 and 5755-5764, with 1000 gallons of regular acid. Maximum pressure 3000#. Injected acid at rate of 3 bbls. per minute with 2800#. Pressure bled down to 1350# upon completion of job. Flowed well to pit. Acid to surface in 23 minutes; new oil to surface in 35 minutes. Flowed on 15/64" choke with 250# pressure. Flowed on 13/64" choke with 400# pressure. Acidized C Zone with 1000 gallons of regular acid. Maximum pressure 2800#. Injected acid at rate of 5 bbls. per minute with 2800#. Pressure bled down to 1600# upon completion of job. Flowed well to pit. Acid to surface after 42 minutes. Cleaned to pit. Well flowed at the estimated rate of 150 bbls. of oil per day through 16/64" choke with no pressure. Stratafrac'd the C Zone with 1000 gallons of gel acid, and 2000 gallons of regular acid. Maximum pressure 2600#. Injected acid at rate of 5 bbls. per minute with 2600# pressure. Pressure bled down to 1500# upon completion of job. Flowed to pit. Acid back to surface in 15 minutes; new oil to surface in 55 minutes. Cleaned well to pit. On 16/64" choke TP: 175# SICP: 750#. On 13/64" choke TP: 475# SICP: 750#. Turned both zones into tank at 6:15 P.M., 3-26-53. Rig released at 7:00 P.M., 3-26-53.

MURPHY
OIL USA, INC.

POST OFFICE BOX 547
POPLAR, MONTANA 59255

MONTANA OFFICE

February 18, 1993

Arnold Dougan
Bureau of Land Management
Miles City District Office
P.O. Box 940
Miles City, MT 59301

Dear Mr. Dougan:

This is in response to your letter dated January 20, 1993 concerning the actual condition of the following wells:

EPU No. 3 Well bore open with perforations 5599'-5603' Last production 7-87

EPU No. 17 Well bore open with perforations 5628'-5632' Last production 10-89

EPU No. 30 Well bore open with perforations 5738'-5746' & 5756'-5766' Last production 7-87

EPU No. 34 Well bore open with perforations 5664'-5668' Last production 6-74

EPU No. 40 Well bore open with perforations 5699'-5703' & 5715'-5719' Last production 9-68

EPU No. 43 Well bore open with perforations 5772'-5778' & 5790'-5798' Last production 8-64

EPU No. 45 Well bore open with perforations 5626'-5634' Last production 6-87

EPU No. 68 Well bore open with perforations 5758'-5762' Last production 3-69

EPU No. 71 Well bore open with perforations 5892'-5901' & 5932'-5940' Last production 8-76

EPU No. 79 Well bore open with perforations 5718'-5726' Last production 3-88

EPU No. 103 Well bore open with perforations 5499'-5501' Last production 8-62

Sincerely,

Raymond Reede
District Manager

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

East Poplar Unit G Battery and Well EPU No. 17

The East Poplar Unit G Battery and the well producing into the battery, EPU No. 17, are onshore production facilities located in Roosevelt County, Montana, in the East Poplar Unit Oil Field. The field is about 6 miles Northeast of Poplar, Montana, in Townships 28 and 29 North and Ranges 50 and 51 East.

The operator of the East Poplar Unit G Lease is Murphy Oil Corporation located at P. O. Box 547, Poplar, Montana 59255. The corporate headquarters are at 200 Jefferson Avenue, El Dorado, Arkansas, 71730.

The battery consists of a 4' x 20' vertical separator, a circulating pump with appropriate lines, and two 500 barrel galvanized bolted tanks. The tanks are vented to the atmosphere and have unrestricted 4" overflow lines between tanks. An earthen pit of about 2,500 barrels capacity is located at the tank battery into which the separator or tanks may be emptied if needed for fluid storage.

The EPU No. 17 is pumped with a rod pump. There is a 4' x 4' x 2' cellar at the wellhead with an overflow line to an earthen pit capable of holding a full days fluid production in case of a leak at the well site.

The field flow lines and the well casing are cathodically protected. The equipment is in excellent operating condition and there is no reasonable likelihood of a discharge or spill event.

The facilities are about 2.1 miles from the Poplar River. The terrain dips gently Northwest. The soil is sandy and the fields are under cultivation. Because of the distance to the river, the type of soil, and the terrain the 2,500 barrel pit at the tank battery and the well cellar and overflow pit are sufficient secondary containment for these facilities.

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

East Poplar Unit R Battery and Well EPU No. 7

The East Poplar Unit R Battery and the well producing into the battery, EPU 7, are onshore production facilities located in Roosevelt County, Montana, in the East Poplar Unit Oil Field. The field is about 6 miles Northeast of Poplar, Montana, in Townships 28 and 29 North and Ranges 50 and 51 East.

The operator of the East Poplar Unit R Lease is Murphy Oil Corporation located at P. O. Box 547, Poplar, Montana 59255. The corporate headquarters are at 200 Jefferson Avenue, El Dorado, Arkansas 71730.

The battery consists of a 5' x 12' horizontal separator, a circulating pump with appropriate lines, and two 400 barrel painted steel welded tanks. The tanks are vented to the atmosphere and have unrestricted 4" overflow lines between tanks. An earthen pit of about 8,000 barrels capacity is located at the tank battery into which the separator or tanks may be emptied if needed for fluid storage.

The EPU No. 7 is pumped with a rod pump. There is a 4' x 4' x 2' cellar at the wellhead with an overflow line to an earthen pit capable of holding a full days fluid production in case of a leak at the well site.

The field flow lines and the well casing are cathodically protected. The equipment is in excellent operating condition and there is no reasonable likelihood of a discharge or spill event.

The facilities are about 1.8 miles from the Poplar River. The terrain dips gently west. The soil is sandy and the fields are under cultivation. Because of the distance to the river, the type of soil, and the terrain the 8,000 barrel pit at the tank battery and the well cellar overflow pit are sufficient secondary containment for these facilities.

Contingency Plans For An Oil Discharge

East Poplar Unit G Battery and Well EPU No. 17

The field is visited twice daily by the pumper. Visualinspection is made on each facility on each visit to determine if any malfunction is occuring. The most likely potential oil discharges are checked thoroughly. Periodically, the field foreman, Mr. Gerald Hagadone, will conduct a close check of the entire facility.

The pumper, Mr. Ferdinand Charette and Mr. Robert Atkinson, have been instructed in the operations and maintenance of equipment to prevent oil and water discharges and informed of the applicable pollution control laws, rules and regulations. If an oil discharge occurs, the pumper will immediately close the proper valves and/or shut down the production facility to stop the discharge. He will then call Mr. Gerald Hagadone, who will in turn inform Mr. Bill Brown, District Superintendent. If needed, the proper state and federal agencies will be notified by Mr. Brown. The discharged oil will be reclaimed or disposed of by approved engineering procedures and in accordance to law.

In the event discharged oil collects on standing water such as a stock pond or rain water standing in a low spot, the oil will be pumped into a tank truck. The skim of oil left on the water will be removed by an oil skimmer owned by Murphy Oil Corporation. The skimmer can be towed to the field within an hours time.

If the discharge is in excess of 50 barrels of oil, the Montana Department of Health and Environmental Sciences in Helena will be notified by Mr. Brown.

If a Spill Event occurs as defined by federal law, the Environmental Protection Agency in Denver, Colorado will be notified by Mr. Brown.

Telephone numbers and personnel to be notified in case of an oil discharge are as follows:

Numbers will be listed as shown on other plans.

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

East Poplar Unit G Battery and Well EPU No. 17

The East Poplar Unit G Battery and the well producing into the battery, EPU 17, are onshore production facilities located in Roosevelt County, Montana in the East Poplar Unit Oil Field. The battery consists of a 4' x 20' vertical separator, a circulating pump with appropriate lines and two 500 barrel galvanized bolted tanks. A 2,500 barrel earthen pit is located at the tank battery into which the separator or tanks may be emptied if needed for fluid storage.

The field is about 6 miles Northeast if Poplar, Montana, in Townships 28 and 29 North and Ranges 50 and 51 East.

The operator of the East Poplar Unit G Lease is Murphy Oil Corporation located at P.O. Box 547, Poplar, Montana 59255. The corporation headquarters are at 200 Jefferson Avenue, El Dorado, Arkansas 71730.

The foreman, Mr. Gerald Hagadone, is responsible for oil spill prevention at this facility. On each trip to the lease the pumper makes a visual inspection of all facilities and reports any malfunction to the foreman, Mr. Gerald Hagadone, and notes this malfunction on the ten day gauge report. There has been no reportable oil Spill Event during the twelve months prior to January 10, 1974.

The equipment is in excellent operating condition and there is no reasonable likelihood of a discharge or spill event.

The field flow lines and the well casing is cathodically protected.

Personnel are properly instructed in the operation and maintenance of equipment to prevent oil discharges, and applicable pollution control laws, rules and regulations. Each employee is given these instructions by the field foreman when they are employed. Scheduled prevention briefings for the operating personnel are conducted frequently enough to assure adequate understanding of the SPCC Plan. The procedures are reviewed every six months by the field foreman with each employee. When changes occur in procedures, each employee is informed.

Fluid in the 2,500 barrel storage pit is pumped to the salt water disposal unit if the water is brackish as determined by chloride tests. If only fresh water is contained in the pit it is disposed of by placing on lease roads to control dust and compact the roads. Any oil in the pit is pumped back through the separator with the water being sent to the disposal well. Oil skims are burned by state permits. There are no outlets from the storage pit and all fluids must be pumped out.

The two 500 barrel tanks are galvanized and are bolted construction. The tanks are vented to the atmosphere and have unrestricted 4" overflow lines between tanks.

The EPU No. 17 is produced with a rod pump. There is a 4' x 4' x 2' cellar at the wellhead with 3" overflow line to a earthen pit capable of holding a full days fluid production in case of a leak at the well site.

The facilities are about 2.1 miles from the Poplar River. The terrain dips gently Northwest. The soil is sandy and the fields are under cultivation. Because of the distance to the river, the type of soil and the terrain the 2,500 barrel pit at the tank battery and the well cellar and overflow pit are sufficient secondary containment for

these facilities.

The tanks are observed daily by the pumper. Periodically, the foreman checks the entire tank battery and producing wells closely. If any trouble is suspected, the facility is shut down, the tanks and/or separator are emptied and cleaned. The facility is then thoroughly inspected by service company personnel, repairs are made if needed andthe unit is placed back into service.

Produced salt water is pumped to a field gathering system for injection into a salt water disposal well. The above ground facilities are observed daily by the pumper and inspected by the foreman closely on his visits to the lease.

All salt water disposal flowlines are cement asbestos lines. These lines are buried and the surface is observed daily by the pumper.

MANAGEMENT APPROVAL

This SPCC Plan will be implemented as herein described.

Signature _____

Name _____

Title _____

CERTIFICATION

I hereby certify that I have examined the facility, and being familiar with the provisions of 40 CFR, Part 112, attest that this SPCC Plan has been prepared in accordance with good engineering practices.

_____
Printed Name Of Registered Professional Engineer

(Seal)

_____
Signature Of Registered Professional Engineer

Date _____

Registration No. _____ State _____

A.F.E. No. 53-24

AUTHORITY FOR EXPENDITURE

MURPHY CORPORATION - EAST POPLAR UNIT #17

Center of SW of SW of Sec. 1, Twp. 28N, Rge. 51E, Roosevelt Co., Montana

WELL DRILLING & CONSTRUCTION EXPENSE:	TO CSG.PT.	COMP. & EQUIP.	TOTAL COST
Drilling: Footage - 5800' @ $8/ft.	$ 46,400	$	$ 46,400
Day Work - 5 days @ $925/day		4,625	4,625
Loc. survey, permit & prep.	200		200
Roads, fences, cattleguards, etc.	250		250
Mud mat. & chem., incl. oil & gas	5,200		5,200
Fuel	5,500		5,500
Water	250		250
Drilling bits, baskets, etc.		200	200
Cementing casing	900	950	1,850
Coring materials & services	3,500		3,500
Testing services, incl. swabbing	1,800	300	2,100
Perforating services		650	650
Other logs, surveys & analyses	1,400	650	2,050
Hydrafrac, acidize, etc. incl. oil		750	750
Float equip., centralizers, etc.	125	250	375
Tubular inspection, testing, etc.		1,200	1,200
Trucking, welding & other labor	500	600	1,100
Supervision & Miscellaneous	1,800	1,200	3,000
Total Est. Well Drlg. & Const. Exp.	67,825	11,375	79,200
WELL EQUIPMENT COSTS:			
Casing: 1000' of 9-5/8" O.D.	3,300		3,300
Casing: 6000' of 5-1/2" O.D.		13,200	13,200
Tubing: 6000' of 2-3/8" O.D.		3,300	3,300
Packers, etc.		650	650
Casing head & connections	300		300
Xmas tree & connections		1,200	1,200
Total Est. Well Equip. Costs	3,600	18,350	21,950
Total Est. Cost of Well	71,425	29,725	101,150
LEASE EQUIPMENT:			
Flow lines		800	800
Other line pipe, valves & fittings		750	750
Trucking, welding & other labor		800	800
Miscellaneous		700	700
Total Est. Cost of Lease Equip.		3,050	3,050
TOTAL EST. COST OF WELL & LEASE EQUIP.	$ 71,425	$ 32,775	$104,200

APPORTIONMENT OF TOTAL ESTIMATED COSTS

APPROVAL OF EXPENDITURE

Production Department

Requested by _____

Date _____

Approved by _____

Date _____ V.P.

Executive Department

Approved by _____

Date _____ Pres.

Approved

_____

By _____

Date _____

AKM-ls
9-30-52

A.F.E. No. 53-52

AUTHORITY FOR EXPENDITURE

MURPHY CORPORATION - EAST POPLAR UNIT TANK BATTERY "O" *

250' E of C of S/2 SE Sec. 2, Twp. 28N., Rge. 51E., Roosevelt Co., Montana

TANK BATTERY CONSTRUCTION	TOTAL COST
Tanks, two 500 bbl. bolted, erected	$ 4,200
Heater-treater	2,200
Chemical pump	200
Line pipe, valves & fittings	1,200
Trucking, welding & other labor	1,300
Miscellaneous	300
Total Estimated Cost	$ 9,400

APPORTIONMENT OF TOTAL ESTIMATED COSTS

APPROVAL OF EXPENDITURE

PRODUCTION DEPARTMENT

Requested by _____

Date _____

Approved by _____

Date _____

EXECUTIVE DEPARTMENT

Approved by _____

Date _____

APPROVED

_____

By _____

Date _____

AWS-lc
4-8-53

* - To serve Unit Well No. 17 or others which might be drilled in the S/2 SE/4 (Zimmerman) Sec. 2, Twp. 28N., Rge. 51E.

A.F.E. No. 56-4-49

AUTHORITY FOR EXPENDITURE
MURPHY CORPORATION - EAST POPLAR UNIT NO. 17
(Installation of Pumping Unit)
SE SE Section 2-T28N-R51E, Roosevelt County, Montana

Pumping unit, complete with engine	$5,650
Labor and materials, setting unit	750
Trucking, small fittings, and incidentals	150
Rods, pump, and well head equipment	3,000
TOTAL ESTIMATED COST	$9,550

APPORTIONMENT OF TOTAL ESTIMATED COST

	%	
Murphy Corporation - Unit Operator	31.448470	$3,003
Nunoco Company	2.096565	200
Placid Oil Company	33.545035	3,203
The Carter Oil Company	16.335860	1,560
Phillips Petroleum Company	16.335860	1,560
C. F. Lundgren	.238210	23

APPROVAL OF EXPENDITURE

Requested by:

Harold D Miller FEB 21 1956
Division Production Supt. Date

Recommend Approval:

Gordon Kirby FEB 21 1956
Division Manager Date

Approved:

By Date

Recommend Approval:

Staff Production Engineer Date

Recommend Approval:

Budget Supervisor Date

Approved:

Vice President-Operations Date

HM:eg
2-21-56

A.F.E. No. 2-1579

AUTHORITY FOR EXPENDITURE
MURPHY CORPORATION - EAST POPLAR UNIT NO. 17
SE SE Section 2, T28N, R51E, Roosevelt County, Montana

(WORKOVER #1)

(To D.O.C. Squeeze for Water Shut Off)

Pulling Unit - 5 (12 hr) Days @ $348 per day	$1,725
Pump Truck Diesel & Emulsion Breaker	900
300' of 4½" Casing Liner @ $1.50 per foot	450
Miscellaneous Trucking, Labor & Material	675
TOTAL ESTIMATED COST -	$3,750

PRESENT STATUS

Pumping 442 BFPD, 95% water (22 BO 420 BW) from B-1 zone perforations 5738-46' and B-2 5757-66'. The C zone was blanked off with DR plug set in Model "D" production packer at 5870' 4-9-55.

JUSTIFICATION FOR EXPENDITURE

To lower water cut and increase production. (This workover was recommended by Engineering Workover Committee.)

PROPOSED WORKOVER

Test casing and DR plug with 1500# psi. Spot jel on DR plug. Displace water with clean oil and D.O.C. squeeze B-1 & 2 zones through retrievable packer with 50 sacks regular cement. Swab test and run 4½" casing liner. Pump test.

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Corporation	31.448470%	$1,179
Manoco Company	2.096565%	$ 78
Placid Oil Company	33.545035%	$1,258
Humble Oil & Refining Co.	16.335860%	$ 613
Phillips Petroleum Co.	16.335860%	$ 613
C. F. Lundgren	.238210%	$ 9

APPROVAL OF EXPENDITURE

Requested by: M J James — 5-29-62

Field Production Superintendent — Date

RECOMMEND APPROVAL:

Division Production Supt. — Date

APPROVED:

Division Manager — Date

MTJ:em
5-29-62

File

A.F.E. No. 5-1520

AUTHORITY FOR EXPENDITURE

MURPHY OIL CORPORATION - EAST POPLAR UNIT NO. 17

SE SE Section 2, ~~25N~~ T28N-R51E, Roosevelt County, Montana

(Fishing Job)

A.F.E. No. 5-1520 is to confirm the estimated cost of fishing rods, tubing, and cutting over and fishing out Model "N" Packer.

ESTIMATED COST

Pulling Unit	$ 6,463.00
Fishing Tools	$ 5,810.00
Misc., Trucking, Labor, and Material	$ 875.00
Total Estimated Cost	$13,153.00

APPORTIONMENT OF TOTAL COST

Murphy Oil Corporation	31.448470%	$ 4,136.42
Placid Oil Company	33.545035%	$ 4,412.16
Humble Oil & Refining Co.	16.335860%	$ 2,148.65
Drilling Specialties Co.	16.335860%	$ 2,148.65
Kunoco Co.	2.096565%	$ 275.76
C. F. Lundgren	.238210%	$ 31.36

APPROVAL OF EXPENDITURE

Requested by:

W. T. James — Date

Recommend Approval:

11-24-65
W. J. Thornton — Date

L. L. Duncan — Date 11/24/65

APPROVED:

_____ — _____

_____ — _____

WTJ/cb
November 24, 1965

File

Mail to MT James

A.F.E. No. 7-1535

AUTHORITY FOR EXPENDITURE
MURPHY OIL CORPORATION - E. P. U. #17
EAST POPLAR FIELD, ROOSEVELT COUNTY, MONTANA
CHANGE TUBING STRING

PRESENT STATUS:

Pumping from the B-1, 2, and "C" Zones. Well Test 9-5-67: 139 BFPD, 90% water cut, 14 BOPD, 125 BWPD. Actual daily production August 1967 was 15 BOPD.

PROPOSAL:

Next tubing leak lay down 2 7/8" tubing (2 7/8" not needed for fluid volume). Run complete string of 2 3/8" Class No. 2 tubing and size rod string to 3/4" and 5/8" taper string. Payout, including lost production, will be 1.7 tubing jobs.

ESTIMATED COSTS

Pulling unit, 20 hours at $33.00 per hour	$ 650
5700' of 2 3/8" EUE J-55 Class No. 2 tubing at $0.54 per foot	3,075
Tuboscope salvaged 2 7/8" tubing at $3.10 per joint	575
1950' of 5/8" and 475' of 3/4" Class No. 2 sucker rods	750
Tuboscope 7/8" rods (59 rods at $1.50 each)	100
Credit for estimated 30% Class No. 2 tubing (1710' at $0.71 per foot)	(1,225)
Credit for estimated 30% Class No. 3 tubing (1710' at $0.47 per foot)	(800)
Credit for estimated 40% Class No. 4 tubing (2280' at $0.15 per foot)	(350)
Credit for estimated 60% Class No. 2, 7/8" rods and 24 Class No. 4 rods	(400)
Miscellaneous labor, trucking and material	400
TOTAL ESTIMATED COST	$ 2,775

APPORTIONMENT OF TOTAL ESTIMATED COSTS

Murphy Oil Corporation	31.448470%	$ 873
Placid Oil Company	33.545035%	931
Humble Oil and Refining Company	16.335860%	453
Drilling Specialties Company	16.335860%	453
Munoco Company	2.096565%	58
C. F. Lundgren	.238210%	7

APPROVAL OF EXPENDITURE

Requested By:

M. T. James — 10-25-67 Date

APPROVED:

W. J. Thornton — 10-27-67 Date

10-25-67
MTJ:mel

A.F.E. No. 2-1515-10

AUTHORITY FOR EXPENDITURE
MURPHY OIL CORPORATION - EAST POPLAR UNIT NO. 17
SE SE Section 2, T28N, R51E, Roosevelt County, Montana
(Workover No. 4)

Proposal and Justification: It is proposed to blank off the C-Zone with a bridge plug and the B-2 Zone with a bridge plug and reperforate, acidize and pump test the B-1 Zone separately.

The B-1, 2, and C Zones were acidized on initial completion and then produced individually, C-Zone through the tubing and the B-Zone up the annulus. In June, 1962 the B-1 & 2 Zones were DOC squeezed to no avail, no acid followed the squeeze. All three zones were produced commingled in November, 1965 and have produced that way since then. Latest test (May, 1972) shows 112 BFPD 9 BOPD 103 BWPD 92% BS&W which is a break even situation. With the B-1 Zone being the tightest of the 3 zones it probably has not been depleted with the B-2 Zone. There is 11 feet of separation between the bottom of the B-1 and top of the B-2. An increase of 20 BOPD can be expected from this zone. At 20 BOPD increase the pay out would be 163 days. The A-Zone is also a potential pay zone in this well.

ESTIMATED COST

Pulling Unit, 35 hrs. @ $40/hr.	$ 1,400
Set 2 Bridge Plugs and Reperforate	$ 1,200
500 Gallon Acid Job	$ 600
Packer Rental	$ 600
Hydrotest Tubing	$ 350
Misc. Labor, Material and Supervision	$ 250
TOTAL ESTIMATED COST	$ 4,400

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.4484707%	$ 1,384
Placid Oil Company	33.5450357%	$ 1,476
Humble Oil & Refining Co.	16.3358607%	$ 719
Phillips Petroleum Company	16.3358607%	$ 719
Munoco Company	2.0965657%	$ 92
C. F. Lundgren	.2382107%	$ 10

APPROVAL OF EXPENDITURE

Requested by: Approved by:

W. G. Brown Date A. W. Simpson Date

WGB/sb
June 19, 1972

A.F.E. NO. 2-1520-10

AUTHORITY FOR EXPENDITURE

MURPHY OIL CORPORATION - EAST POPLAR UNIT NO. 17
SE SE Section 2, T28N, R51E, Roosevelt County, Montana
(Change Out Tubing String)

Proposal and Justification: It is proposed to change out the 2-3/8" tubing with 2-7/8" tubing.

A.F.E. No. 2-1515-10 was to set a bridge plug over the C-Zone and B-2 Zone and reperforate in the B-1 Zone. This was accomplished and the 2-3/8" tubing and a 1-3/4" tubing pump (largest pump for this tubing) ran and put on production. The fluid level will not drop below 1120' in the annulus producing at the rate of 276 BFPD 22 BOPD 254 BWPD 92% BS&W. This rate can be increased by installing a larger pump but requires 2-7/8" tubing to accomplish this. A 10 BOPD increase should be realized giving a payout of 80 days using $3.36 per bbl. for payout.

ESTIMATED COST

Pulling Unit, 12 Hrs. at $40 Per Hr.	$ 500
4050' of Condition 2 2-7/8" tubing	3,250
2400' of Condition 2 7/8" Rods	1,275
Credit for 5000' of Condition 2 2-3/8" tubing	(2,300)
Credit for 51 5/8" Condition 3 Rods	(250)
Roustabout Labor	300
Misc. Labor, Material and Supervision	150
TOTAL ESTIMATED COST	$ 2,925

APPROTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 920
Placid Oil Company	33.545035%	981
Humble Oil and Refining Company (Exxon Company)	16.335860%	478
Phillips Petroleum Company	16.335860%	478
Munoco Company	2.096565%	61
C. F. Lundgren	.238210%	7

APPROVAL OF EXPENDITURE

Requested by: Approved by:

W. G. Brown — 7-26-72 Date — A. W. Simpson — 7/31/72 Date

WGB/sb
July 26, 1972

Date Job Comp - 8-14-72
Approx. cost - $2709.-
F.J. O'Brien

A.F.E. No. 2-1515-10

AUTHORITY FOR EXPENDITURE
MURPHY OIL CORPORATION - EAST POPLAR UNIT NO. 17
SE SE Section 2, T28N, R51E, Roosevelt County, Montana
(Workover No. 4)

Proposal and Justification: It is proposed to blank off the C-Zone with a bridge plug and the B-2 Zone with a bridge plug and reperforate, acidize and pump test the B-1 Zone separately.

The B-1, 2, and C Zones were acidized on initial completion and then produced individually, C-Zone through the tubing and the B-Zone up the annulus. In June, 1962 the B-1 & 2 Zones were DOC squeezed to no avail, no acid followed the squeeze. All three zones were produced commingled in November, 1965 and have produced that way since then. Latest test (May, 1972) shows 112 BFPD 9 BOPD 103 BWPD 92% BS&W which is a break even situation. With the B-1 Zone being the tightest of the 3 zones it probably has not been depleted with the B-2 Zone. There is 11 feet of separation between the bottom of the B-1 and top of the B-2. An increase of 20 BOPD can be expected from this zone. At 20 BOPD increase the pay out would be 163 days. The A-Zone is also a potential pay zone in this well.

ESTIMATED COST

Pulling Unit, 35 hrs. @ $40/hr.	$ 1,400
Set 2 Bridge Plugs and Reperforate	1,200
500 Gallon Acid Job	600
Packer Rental	600
Hydrotest Tubing	350
Misc. Labor, Material and Supervision	250
TOTAL ESTIMATED COST	$ 4,400

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	$ 1,384
Placid Oil Company	33.545035%	1,476
Humble Oil & Refining Co.	16.335860%	719
Phillips Petroleum Company	16.335860%	719
Munoco Company	2.096565%	92
C. F. Lundgren	.238210%	10

APPROVAL OF EXPENDITURE

Requested by:

W. G. Brown — Date 6-19-72

Approved by:

A. W. Simpson — Date 6/26/72

WGB/sb
June 19, 1972

106616 11/9/89

Rec. Prc NOV 9 1989

A.F.E. NO. 9-0511-010
Supplement No. 1

MURPHY OIL USA, INC.
AUTHORITY FOR EXPENDITURE
EAST POPLAR UNIT NO. 17
SE SE SECTION 2, T28N, R51E
ROOSEVELT COUNTY, MONTANA

This A.F.E. was overspent as the Packer was stuck in the hole, the tubing had to be shot off and drilling collars and jars were required to get the tubing loose.

SUPPLEMENT COST

	Original	Actual	Supplement
Workover Rig	$15,000	$17,239	$ 2,239
Rental Tools	10,000	16,245	6,245
Wireline Services	6,000	7,798	1,798
Roustabout	1,000	1,996	996
Water Truck	1,000	1,186	186
Supervision & Misc.	2,000	2,177	177
TOTAL SUPPLEMENT COST	$35,000	$46,641	$11,641

APPORTIONMENT OF SUPPLEMENTAL COST

Murphy Oil USA, Inc.	60.363718%	21,127	28,154	7,027
Doil Oil & Gas Corp.	20.965647%	7,338	9,779	2,441
Exxon Company, U.S.A.	16.335860%	5,718	7,620	1,902
Munoco	2.096565%	734	978	244
C.F. Lundgren	.238210%	83	110	27

APPROVAL OF EXPENDITURE

Requested by: Raymond Reede 11-6-89
Raymond Reede Date

Approved by: A.W. Simpson 11/10/89
A.W. Simpson Date

RR/jh
November 6, 1989

DATE JOB COMPLET...
APPROX...

DATE JOB COMPLETED 11-30-90
APPROXIMATE COST $46,641.00
BY RR

EPU #17

D-9/21/93

A.F.E. No. 30705

MURPHY EXPLORATION & PRODUCTION COMPANY
AUTHORITY FOR ABANDONMENT
EAST POPLAR UNIT NO. 17
SE SE SECTION 2, T28N, R51E
ROOSEVELT COUNTY, MONTANA

PROPOSAL & JUSTIFICATION:

This well was originally completed in the B-1, B-2 and C-Zone which watered out. There is a bad spot in the casing at 4013'. This well is not part of the East Poplar Unit and the lease has expired.

It is proposed to P & A this well in accordance with state and federal regulations. This well is on the east side of the field and would not be a good location for a SWD well.

ESTIMATED COST

Rig	$ 4,000
Wire Line	4,000
Roustabout	1,000
Cement & Services	3,000
Dirt Work & Reclamation	3,000
Supervision & Miscellaneous	1,000
TOTAL	$16,000
Credit for Used Equipment	
1 Cond. #3 160 American gear box & base	(500)
3900' Cond. #3 2-7/8", J-55, 8rd EUE Tbg	(6,240)
890' Cond. #3 5½" 15.5#, J-55 csg	(1,335)
TOTAL CREDIT	(8,075)
TOTAL ESTIMATED COST	$ 7,925

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Expl & Prod Co.	60.363718%	$ 4,784
Doil Oil & Gas Corp.	20.965647%	1,662
Exxon Company U.S.A.	16.335860%	1,294
Munoco	2.096565%	166
C.F. Lundgren	.238210%	19

APPROVAL OF EXPENDITURE

Requested by:

Raymond Reede 8-31-93
Raymond Reede Date

Approved by:

Sidney W. Campbell 9-10-93
Sidney Campbell Date

Paul T. Ramsey 9-10-93
Paul Ramsey Date

Form 33 1b—1M—4-52

BEST COPY AVAILABLE

BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF MONTANA

OIL AND GAS WELL DIVISION

Lease Fee land-Zimmern

SUNDRY NOTICES AND REPORT OF WELLS

(Indicate Nature of Data by Checking)

Notice of intention to drill	XXX	Subsequent record of shooting	
Notice of intention to change plans		Record of perforating casing	
Notice of date for test of water shut-off		Notice of intention to pull or otherwise alter casing	
Report on result of test of water shut-off		Notice of intention to abandon well	
Notice of intention to redrill or repair well		Subsequent report of abandonment	
Notice of intention to shoot		Supplementary well history	

February 20 19 53

Following is a {notice of intention to do work / ~~report of work done~~} on land {owned / leased} described as follows:

MONTANA (State) Roosevelt (County) East Poplar (Field)

Well No. 17 C SE/4 SE/4 Sec. 2 (m.sec.) 28N (Township) 51E (Range) Meridian)

The well is located 660 ft. {S. / N.} of South line and 661 ft. {E. / W.} of East line of Sec. 2

The elevation of the ground above the sea level is 2200 ft.

DETAILS OF PLAN OF WORK

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work.)

E.P.U. # 17, 13 3/8 inch conductor casing will be set at approximately 40 feet and cemented with 50 sacks. 8 5/8 inch surface casing will be set at approximately 950 feet and cemented with 400 sacks. Total depth is expected to be 5650 feet, so as to test the "B" and "C" zones of the Madison formation. 5 1/2 inch casing will be set above the "C" Zone.

RECEIVED
FEB 22 1953
OIL CONSERVATION DIV.
STATE BOARD OF RAILROAD COMMISSIONERS
BILLINGS, MONTANA

Approved February 27, 1953 (Date)

Company Murphy Corporation

By Harold Milam

Title Chief Oil & Gas Field Supervisor

Title District Production Supt.

Oil and Gas Well Division

Address Box 16, Poplar, Montana

NOTE:—Reports on this Form to be submitted to the Supervisor for Approval

Form 33 1b—1M—4-52 Byerly Pub. Co., Lewistown, Mont.

BOARD OF RAILROAD COMMISSIONERS OF THE STATE OF MONTANA

OIL AND GAS WELL DIVISION

Lease Fee land-Zimmerman

SUNDRY NOTICES AND REPORT OF WELLS

(Indicate Nature of Data by Checking)

Notice of intention to drill		Subsequent record of shooting	
Notice of intention to change plans		Record of perforating casing	
Notice of date for test of water shut-off		Notice of intention to pull or otherwise alter casing	
Report on result of test of water shut-off		Notice of intention to abandon well	
Notice of intention to redrill or repair well		Subsequent report of abandonment	
Notice of intention to shoot		Supplementary well history	XXX

March 31, 19 53

Following is a {notice of intention to do work / report of work done} on land {owned / leased} described as follows:

MONTANA (State) Roosevelt (County) East Poplar (Field)

Well No. 17 C SE/4 SE/4 Sec. 2 (m.sec.) 28N (Township) 51E (Range) (Meridian)

The well is located 660 ft. {S. / N.} of South line and 661 ft. {E. / W.} of East line of Sec. 2

The elevation of the ground above the sea level is 2200 ft.

DETAILS OF PLAN OF WORK

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work.)

Drilled out float and shoe. Ran Lane-Wells log. Perforated 5738 to 5746 and 5757 and 5766. Set Baker Production Packer at 5870'. 3-25-53

Ran 188 joints (5835.43') 2 3/8" E.U.E., 4.70#, J-55, 8 rd. thd. Range 2, National tubing, 3 subs, Otis choke, nipple, Baker latch-on sub, 3 Baker seal nipples, 3 Baker flush joint subs and 1 bull plugged sub landed 10.20' below RKB. Acidized 8 zones through perforations with 1000 gallons of regular Dowell acid. Maximum pressure 3000#. Injected acid at 3.0 bbls. per min. with 2800#. Pressure bled down to 1350# upon completion of job. Flowed well to pit. Acid to surface in 25 min. New oil to surface in 35 min. Flowed on 16/64" choke with 250# pressure. Flowed on 13/64" choke with 400# pressure. Acidized C Zone with 1000 gallons of regular Dowell acid. Maximum pressure 2800#. Injected acid at 5.0 bbls. per min. with 2800#. Pressure bled down to 1600# upon completion of job. Flowed well to pit. Acid to surface in 2 min. New oil to surface after 18 min. Cleaned to pit. Well flowed at the estimated rate of 150 barrels oil per day through a 16/64 choke with no pressure. Stratafracced the C Zone with 1000 gallons gel acid, 2000 gallons regular acid. Maximum pressure 2800#. Injected acid at 5 bbls. per min. with 2600# pressure. Pressure bled down to 1500# upon completion of job. Flowed to pit. Acid back to surface in 15 min. New oil to surface in 55 min. Cleaned well to pit. On 16/64" choke, FP. 175# SICP. 750# on 13/64" choke, FP. 475# SICP. 750#. Turned both zones into bank at 6:15 P.M., 3-26-53. Rig released at 7:00 P.M., 3-26-53.

Approved 4-7-53 (Date)

Chief Oil & Gas Field Supervisor

Oil and Gas Well Division

Company Murphy Corporation

By [signature] District Production Supt.

Address Box 76, Poplar, Montana

NOTE:—Reports on this Form to be submitted to the Supervisor for Approval.

C.H.Murphy et al — Well No. 23-A

Well Name: A.L. Zimmerman #17 — Twp. 28 N. — Rge. 51 E.

Structure: Poplar — Sec. 2

County: Roosevelt — Location: C SE SE

State: Montana — 659 N/S, 660 W/E

Surface Elevation and Formation: 2200 Gr. 2211(Log)

Landowner: Zimmerman A.L.

Lessee: C.H.Murphy et al — API # 25-083-05050

Drilling Company: C.H.Murphy et al

Representative in Charge: Harold Milam Dist Prod Supt.

Contractor or Drillers: Massey, Morris, Martin.

Date Location: 2-20-53 App 2-27-53 FCP) — Date Spudded: 2-24-53;

3-3-53 MORT (FCP) LOG IN FILE.

3-6-53 WOC 1049, 1018' of 9⅝5/8" w/ 400 sx. Sch: Jud Riv 842 (FCP)

3-12-53 Drilling 4093; Samp: Muddy 2770; Skull Cr. 3050; Dakota 3190; Morrison 3580; Swift 3705; Rierdon 4000 (FCP) SCH LOG, ETC IN FILE

3-20-53 Drilling 5310; Piper Sh 4358 Piper ls; 4435; Gyp spgs 4510; Spearfish 4685; Amsden 4810; Heath 4940; Otter 5105, Kibbey Sd 5230 (FCP)

Completed	Total Depth	Formation
3-21-53	5902 (Log)	

Oil	Gas	Water
I.P. 500 BOPD		

Final Result

3-28-53 comp 3-21-53, 5½" at 5878 w/ 300 sx. Sch Tops: Madison 5500; A zone 5607; B1 5735; B2 5757; C. 5902, testing (FCP)

4-3-53 I.P. 500 BOPD (FCP)

Sands:

C 5902- Water.

A 5607-5620
B-1 5735-5743
B-2 5757-5771

Casing Record:

1018' of 9-5/8" w/ 400 sx.
5878' of 5½" w/ 300 sx.

Prod 1st. 4 hrs. 77.97 Bbls.

Put to producing 3-27-53

Form No. 2

GENERAL RULES
201, 202, 213,
216, 219, 233.1

(SUBMIT IN QUADRUPLICATE)

TO

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

NOTICE!
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE COMMISSION.

RECEIVED
JUN 29 1962
OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	
		Workover History #1	XX

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

June 26, 1962

Following is a { ~~notice of intention to do work~~ / report of work done } on land { ~~XXXXX~~ owned / leased } described as follows:

LEASE Fee (Zimmerman)

MONTANA (State) Roosevelt (County) East Poplar (Field)

Well No. 17 C SE SE (m. sec.) Section 2 (Township) 28N (Range) 51E (Meridian) M.P.M.

The well is located 660 ft. from { XX / S } line and 661 ft. from { E / XX } line of Sec. 2

(Locate accurately on Plat on back of this form the well location, and show lease boundary.)

The elevation of the derrick floor above the sea level is 2211' K.B.

READ CAREFULLY — **DETAILS OF PLAN OF WORK** — READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing.)

DETAILS OF WORK RESULT

(See Attached Sheets)

RECEIVED
JUN 28 1962
OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA - BILLINGS

Approved subject to conditions on reverse of form

Date June 28, 1962

By P M Watkins, Petr Engr
Title

District Office Agent

Company Murphy Corporation

By M C James

Title Field Production Supt.

Address Poplar, Montana

NOTE:—Reports on this Form to be submitted to the District Agent for Approval in Quadruplicate.

WHEN USED AS PERMIT TO DRILL, THIS EXPIRES 90 DAYS FROM DATE OF APPROVAL

OVER

Form No. 2
GENERAL RULES
201, 202, 213,
216, 219, 233.1

(SUBMIT IN QUADRUPLICATE)
TO

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

RECEIVED JUL 1972 OIL & GAS CONS. COMM. STATE OF MONT. BILLINGS

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE COMMISSION.

RECEIVED JUL 1972 OIL & GAS CONS. COMM. STATE OF MONT. HELENA

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	
Recomplete in B-1 Zone	XX		

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

July 10, 1972, 19

Following is a {notice of intention to do / ~~report of work done~~ work} on land {~~XXXXXXX~~ / leased} described as follows:

LEASE East Poplar Unit No. 17

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)

Well No. 17 SE SE Section 2 (m. sec.) T28N (Township) R51E (Range) MPM (Meridian)

The well is located 660 ft. from {XXX / S} line and 660 ft. from {E / XXX} line of Sec. 2

LOCATE ACCURATELY ON PLAT ON BACK OF THIS FORM THE WELL LOCATION, AND SHOW LEASE BOUNDARY

The elevation of the derrick floor above the sea level is 2200' G.L.

READ CAREFULLY **DETAILS OF PLAN OF WORK** READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

It is proposed to blank off the C-Zone with a bridge plug and the B-2 Zone with a bridge plug and reperforate, acidize, and pump test the B-1 Zone separately.

Latest test (May, 1972) shows 112 BFPD 9 BOPD 103 BWPD 92% BS&W which is a break even situation. With the B-1 Zone being the tightest of the 3 zones it probably has not been depleted with the B-2 Zone. There is 11 feet of separation between the bottom of the B-1 and top of the B-2. An increase of 20 BOPD can be expected from this zone.

Approved subject to conditions on reverse of form

Date 7-11-72

By [signature] District Office Agent Title [signature]

Company Murphy Oil Corporation

By W. H. Brown

Title District Superintendent

Address P.O. Box 547, Poplar, Montana 59255

COMMISSION USE ONLY
API WELL NUMBER

STATE	COUNTY	WELL
2 5		

NOTE:—Reports on this form to be submitted to the District Agent for Approval in Quadruplicate

WHEN USED AS PERMIT TO DRILL, THIS EXPIRES 90 DAYS FROM DATE OF APPROVAL.

OVER

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved. Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

U. S. Geological Survey
RECEIVED
JUL 12 1972
Billings, Montana

5. LEASE DESIGNATION AND SERIAL NO.: Zimmerman

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Fort Peck

1. OIL WELL [X] GAS WELL [ ] OTHER

7. UNIT AGREEMENT NAME: East Poplar Unit

2. NAME OF OPERATOR: Murphy Oil Corporation

8. FARM OR LEASE NAME: East Poplar Unit

3. ADDRESS OF OPERATOR: P.O. Box 547, Poplar, Montana 59255

9. WELL NO.: No. 17

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface

660' from the South line and 660' from the East line

10. FIELD AND POOL, OR WILDCAT: East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: SE SE Section 2, T28N, R51E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 2200' G.L.

12. COUNTY OR PARISH: Roosevelt

13. STATE: Montana

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			
(Other) Recomplete in B-1 Zone				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

It is proposed to blank off the C-Zone with a bridge plug and the B-2 Zone with a bridge plug and reperforate, Acidize, and pump test the B-1 Zone separately.

Latest test (May, 1972) shows 112 BFPD 9 BOPD 103 BWPD 92% BS&W which is a break even situation. With the B-1 Zone being the tightest of the 3 zones it probably has not been depleted with the B-2 Zone. There is 11 feet of separation between the bottom of the B-1 and top of the B-2. An increase of 20 BOPD can be expected from this zone.

18. I hereby certify that the foregoing is true and correct

SIGNED ORIGINAL SIGNED BY W. G. BROWN TITLE District Superintendent DATE July 10, 1972

(This space for Federal or State office use)

APPROVED BY [signature] TITLE DATE 7-20-72
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form No. 2

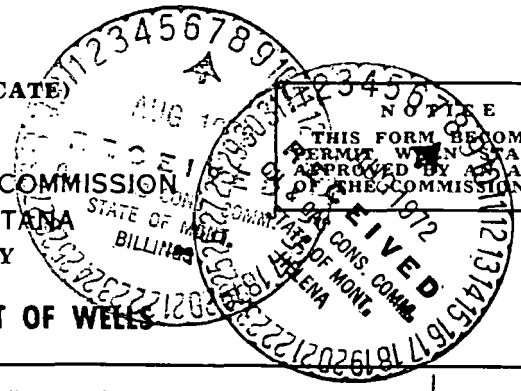
GENERAL RULES
201, 202, 213,
216, 219, 233.1

(SUBMIT IN QUADRUPLICATE)

TO

OIL AND GAS CONSERVATION COMMISSION
OF THE STATE OF MONTANA
BILLINGS OR SHELBY

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AGENT OF THE COMMISSION.



SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	
		Recomplete in B-1 Zone	XXX

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

August 4, 19 72

Following is a {report of work done} on land {leased} described as follows:

LEASE East Poplar Unit No. 17

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)

Well No. 17 SE SE (m. sec.) Section 2 T28N (Township) R51E (Range) MPM (Meridian)

The well is located 660 ft. from {S} line and 660 ft. from {E} line of Sec. 2

LOCATE ACCURATELY ON PLAT ON BACK OF THIS FORM THE WELL LOCATION, AND SHOW LEASE BOUNDARY

The elevation of the derrick floor above the sea level is 2200' G.L.

READ CAREFULLY **DETAILS OF PLAN OF WORK** READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

Ran Wireline junk basket and gauge ring to 5810'. Set Baker C.I. bridge plug at 5800' with 1 sack of cement on top to block off the C-Zone. Set Baker C.I. bridge plug at 5753' with 1/2 sack of cement on top to plug the B-2 Zone. Reperforated the B-1 Zone with Wireline 50 gram casing gun, 1 hole per foot from 5738' to 5742'. Acidized with 750 gallons of 15% regular Dowell acid with inhibitor and emulsion breaker added. Est. injection rate of .02 BPM at 3900 PSI. Pressure broke to 2500 PSI with 5 bbls. of acid in formation. Injected remainder of acid at 1 BPM and 2800 PSI. Overflushed acid with 3 bbls of formation fluid. Immediate S.I. 2250 PSI 15 Min. S.I. 800 PSI

Workover Potential: 286 BFPD 263 BWPD 23 BOPD 92% W.C.

Approved subject to conditions on reverse of form

Date 8-7-72

By [signature] District Office Agent Title [signature]

Company MURPHY OIL CORPORATION

By W. L. Brown

Title District Superintendent

Address P.O. Box 547, Poplar, Montana 59255

COMMISSION USE ONLY
API WELL NUMBER
25
STATE COUNTY WELL

NOTE:—Reports on this form to be submitted to the District Agent for Approval in Quadruplicate

WHEN USED AS PERMIT TO DRILL, THIS EXPIRES 90 DAYS FROM DATE OF APPROVAL.

OVER

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

U.S. Geological Survey
RECEIVED
AUG 7 1972
Billings, Montana

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: **Murphy Oil Corporation**

3. ADDRESS OF OPERATOR: **P.O. Box 547, Poplar, Montana 59255**

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: **660' from the South line and 660' from the East line**

5. LEASE DESIGNATION AND SERIAL NO.: **Zimmerman**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME: **Fort Peck**

8. FARM OR LEASE NAME: **East Poplar Unit**

9. WELL NO.: **East Poplar Unit**

10. FIELD AND POOL, OR WILDCAT: **No. 17**

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: **East Poplar Unit**

12. COUNTY OR PARISH: **SE SE Section 2, T28N, R51E**

13. STATE: **Roosevelt** / **Montana**

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): **2200' G.L.**

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other) **Recomplete in the B-1 Zone**		[XX]	
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Ran Wireline junk basket and gauge ring to 5810'. Set Baker C.I. bridge plug at 5800' with 1 sack of cement on top to block off the C-Zone. Set Baker C.I. bridge plug at 5753' with 1/2 sack of cement on top to plug the B-2 Zone. Reperforated the B-1 Zone with Wireline 50 gram casing gun, 1 hole per foot from 5738' to 5742'. Acidized with 750 gallons of 15% regular Dowell acid with inhibitor and emulsion breaker added. Est. injection rate of .02 BPM at 3900 PSI. Pressure broke to 2500 PSI with 5 bbls. of acid in formation. Injected remainder of acid at 1 BPM and 2800 PSI. Overflushed acid with 3 bbls. of formation fluid. Immediate S.I. 2250 PSI 15 Min. S.I. 800 PSI

Workover Potential: 286 BFPD 263 BWPD 23 BOPD 92% W.C.

18. I hereby certify that the foregoing is true and correct

SIGNED ORIGINAL SIGNED BY W. G. BROWN TITLE **District Superintendent** DATE **August 4, 1972**

(This space for Federal or State office use)

APPROVED BY [signature] TITLE DISTRICT ENGINEER DATE 8-9-72

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

on weekly list 2-10-84

Form No. 2

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE BOARD.

(SUBMIT IN QUADRUPLICATE)

TO

BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA

BILLINGS OR SHELBY

ARM 36.22.307 ARM 36.22.1003
ARM 36.22.601 ARM 36.22.1004
ARM 36.22.602 ARM 36.22.1013
ARM 36.22.603 ARM 36.22.1301
ARM 36.22.604 ARM 36.22.1306
ARM 36.22.605 ARM 36.22.1309

RECEIVED
FEB 1984
OIL & GAS CONS. COMM.
STATE OF MONT.
BILLINGS

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well TA	X	Report of Fracturing	

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

January 31, 1984

Following is a {report of work done} on land {leased} described as follows:

LEASE Zimmerman

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)

Well No. 17 SE SE (m. sec.) Section 2 T28N (Township) R51E (Range) MPM (Meridian)

The well is located 659 ft. from {S} line and 660 ft. from {E} line of Sec. 2

LOCATE WELL SITE ACCURATELY ON PLAT ON BACK OF THIS FORM.

The elevation of the ground or K.B. above the sea level is 2200' G. L.

READ CAREFULLY **DETAILS OF PLAN OF WORK** READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings, cementing points, and all other important proposed work, particularly all details of Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

This well has been temporarily abanoned pending further evaluation. The last well test shows the well producing 648 BWPD with 100% water cut.

Approved subject to conditions on reverse of form

Date FEB - 6 1984

By Claire Hamburg
District Office Agent Title

Company Murphy Oil Corporation

By Raymond Reedle

Title District Superintendent

Address P.O. Box 547, Poplar, MT 59255

BOARD USE ONLY
API WELL NUMBER
25 (STATE) 0185 (COUNTY) 05050 (WELL)

NOTE:—Reports on this form to be submitted to the appropriate District for approval

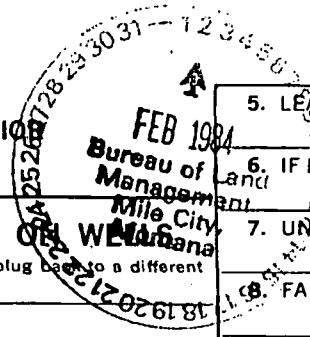
DRILLING PERMIT EXPIRES 90 DAYS FROM DATE OF APPROVAL. UPON WRITTEN REQUEST PRIOR TO EXPIRATION DATE, ONE 90 DAY EXTENSION MAY BE GRANTED.

OVER

Form 9–331
Dec. 1973

Form Approved.
Budget Bureau No. 42–R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9–331–C for such proposals.)

1. oil well ☒x gas well ☐ other

2. NAME OF OPERATOR
Murphy Oil Corporation

3. ADDRESS OF OPERATOR
P.O. Box 547, Poplar, MT 59255

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 660' from the South line and 660' from the East line
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
Zimmerman

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Fort Peck

7. UNIT AGREEMENT NAME
East Poplar Unit

8. FARM OR LEASE NAME
East Poplar Unit

9. WELL NO.
17

10. FIELD OR WILDCAT NAME
East Poplar Unit

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
SE SE Section 2, T28N, R51E

12. COUNTY OR PARISH
Roosevelt

13. STATE
Montana

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
2200' G.L.

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:
TEST WATER SHUT-OFF	☐	☐
FRACTURE TREAT	☐	☐
SHOOT OR ACIDIZE	☐	☐
REPAIR WELL	☐	☐
PULL OR ALTER CASING	☐	☐
MULTIPLE COMPLETE	☐	☐
CHANGE ZONES	☐	☐
ABANDON*	☒x	☐
(other) temporarily		

(NOTE: Report results of multiple completion or zone change on Form 9–330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well has been temporarily abanoned pending further evaluation. The last well test shows the well producing 648 BWPD and 100% water cut.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED ORIGINAL SIGNED RAYMOND REEDE TITLE District Superintendent DATE January 31, 1984

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

Murphy

*See Instructions on Reverse Side

Form 3160-5 (November 1983) (Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: Zimmerman

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Fort Peck

7. UNIT AGREEMENT NAME: East Poplar Unit

1. OIL WELL [X] GAS WELL [ ] OTHER

8. FARM OR LEASE NAME: East Poplar Unit

2. NAME OF OPERATOR: Murphy Oil USA, Inc.

9. WELL NO.: 17

3. ADDRESS OF OPERATOR: P.O. Box 547, Poplar, MT 59255

10. FIELD AND POOL, OR WILDCAT: East Poplar Unit

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
660' from the south line and 660' from the East line

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: SE SE Section 2, T28N, R51E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 2200' G.L.

12. COUNTY OR PARISH: Roosevelt

13. STATE: MT

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			
(Other) Zone Change			[X]				

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well has been temporarily abandoned with the last test 648 BWPD. It is proposed to set a CIBP at 5730' and perforate the A-4 Zone 5628'-32' and 5636'-40', if necessary, acidize with 250 gallons 15% HCL acid.

AUG 1989

18. I hereby certify that the foregoing is true and correct

SIGNED Raymond Reddle TITLE District Manager DATE August 28, 1989

(This space for Federal or State office use)

ACCEPTED APPROVED BY [signature] TITLE ADM-Minerals DATE AUG 31 1989

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

OP

Form No. 2 R 4-85

NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE BOARD.

(SUBMIT IN QUADRUPLICATE)

TO

BOARD OF OIL AND GAS CONSERVATION OF THE STATE OF MONTANA

BILLINGS OR SHELBY

SUNDRY NOTICES AND REPORT OF WELLS

ARM 36.22.307, ARM 36.22.601, ARM 36.22.602, ARM 36.22.603, ARM 36.22.604, ARM 36.22.605, ARM 36.22.1003, ARM 36.22.1004, ARM 36.22.1013, ARM 36.22.1301, ARM 36.22.1306, ARM 36.22.1309

AUG 1989

Notice of Intention to Drill*		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	
Zone Change	X		

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

August 28, 19 89

Following is a {notice of intention to do work / ~~report of work done~~} on land {~~owned~~ / leased} described as follows:

LEASE TYPE .... (Private, State, Federal, Indian) LEASE East Poplar Unit 17

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)

Well No. 17 SE SE Section 2 (m. sec.) T28N (Township) R51E (Range) MPM (Meridian)

The well is located 660' ft. from {~~N~~ / S} line and 660 ft. from {E / ~~W~~} line of Sec. 2

* For notice of intention to drill, write the API# or the well name of another well on this lease if one exists

LOCATE WELL SITE ACCURATELY ON PLAT ON BACK OF THIS FORM.

The elevation of the ground or K.B. above the sea level is 2200' G.L.

READ CAREFULLY **DETAILS OF PLAN OF WORK** **READ CAREFULLY**

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings, cementing points, and all other important proposed work, particularly all details of Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

This well had been temporarily abandoned with the last test 648 BWPD. It is proposed to set a CIBP at 5730' and perforate the A-4 Zone 5628'-32' and 5636'-40', if necessary, acidize with 250 gallons 15% HCL acid.

Approved subject to conditions on reverse of form

Date SEP 05 1989

By Floyd W. Podall, field supervisor
District Office Agent Title

Company Murphy Oil USA, Inc.

By Raymond Reed

Title District Manager

Address Box 547, Poplar, MT 59255

BOARD USE ONLY
API WELL NUMBER
25 (STATE) 085 (COUNTY) 05050 (WELL)

NOTE:—Reports on this form to be submitted to the appropriate District for approval.
DRILLING PERMIT EXPIRES SIX MONTHS FROM DATE OF APPROVAL.

C.H.Murphy et al — Well No. 23-A

Well Name A.L. Zimmerman #17 — Twp. 28 N. — Rge. 51 E.

Structure: Poplar — Sec. 2 Location: C SE SE

County: Roosevelt — 659 N/S, 660 W/E

State: Montana

Surface Elevation and Formation: 2200 Gr. 2211(Log)

Landowner: Zimmerman A.L.

Lessee: C.H.Murphy et al — API # 25-085-05050

Drilling Company: C.H.Murphy et al

Representative in Charge: Harold Milam Dist Prod Supt.

Contractor or Drillers: Massey, Morris, Martin.

Date Location: 2-20-53 App 2-27-53 FCP) — Date Spudded: 2-24-53;

3-3-53 MORT (FCP) LOG IN FILE.

3-6-53 WOC 1049, 1018' of 9⅝5/8" w/ 400 sx. Sch: Jud Riv 842 (FCP)

3-12-53 Drilling 4093; Samp: Muddy 2770; Skull Cr. 3050; Dakota 3190; Morrison 3580; Swift 3705; Rierdon 4000 (FCP) SCH LOG, ETC IN FILE

3-20-53 Drilling 5310; Piper Sh 4358 Piper ls; 4435; Gyp spgs 4510; Spearfish 4685; Amsden 4810; Heath 4940; Otter 5105, Kibbey Sd 5230 (FCP)

Completed: 3-21-53 — Total Depth: 5902 (Log) — Formation:

Oil: I.P. 500 BOPD — Gas: — Water:

Final Result

3-28-53 comp 3-21-53, 5½" at 5878 w/ 300 sx. Sch Tops: Madison 5500; A zone 5607; B1 5735; B2 5757; C. 5902, testing (FCP)

4-3-53 I.P. 500 BOPD (FCP)

Sands:

C 5902- Water.

A 5607-5620
B-1 5735-5743
B-2 5757-5771

Casing Record:

1018' of 9-5/8" w/ 400 sx.
5878' of 5½" w/ 300 sx.

Prod 1st. 4 hrs. 77.97 Bbls.

Put to producing 3-27-53

Form No. 2 R 4-85

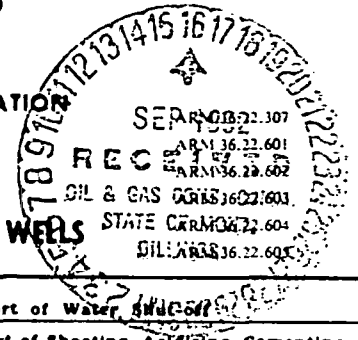
NOTICE
THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE BOARD.

(SUBMIT IN QUADRUPLICATE)

TO

BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA

BILLINGS OR SHELBY



ARM 36.22.307
ARM 36.22.601
ARM 36.22.602
ARM 36.22.603
ARM 36.22.604
ARM 36.22.605
ARM 36.22.1003
ARM 36.22.1004
ARM 36.22.1013
ARM 36.22.1301
ARM 36.22.1306
ARM 36.22.1309

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill *		Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans		Subsequent Report of Shooting, Acidizing, Cementing	X
Notice of Intention to Test Water Shut-off		Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well		Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement		Subsequent Report of Abandonment	
Notice of Intention to Pull or Alter Casing		Supplementary Well History	
Notice of Intention to Abandon Well		Report of Fracturing	

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

September 14, 19 92

Following is a {notice of intention to do work / report of work done} on land {owned / leased} described as follows:

LEASE TYPE ..... (Private, State, Federal, Indian) LEASE East Poplar Unit No. 17

MONTANA (State) Roosevelt (County) East Poplar Unit (Field)

Well No. 17 SE SE Section 2 (m. sec.) T28N (Township) R51E (Range) MPM (Meridian)

The well is located 660 ft. from {N / S} line and 660 ft. from {E / W} line of Sec. 2

* For notice of intention to drill, write the API# or the well name of another well on this lease if one exists.

LOCATE WELL SITE ACCURATELY ON PLAT ON BACK OF THIS FORM.

The elevation of the ground or K.B. above the sea level is 2200' G.L.

READ CAREFULLY — **DETAILS OF PLAN OF WORK** — READ CAREFULLY

(State names of and expected depths to objective sands; show size, weights, and lengths of proposed casings, cementing points, and all other important proposed work, particularly all details of Shooting, Acidizing, Fracturing.)

DETAILS OF WORK
RESULT

The casing on this well is collapsed at 4013'. This job couldn't be completed as planned and is currently temporarily abandoned.

Approved subject to conditions on reverse of form

Date 9/17/92

By James W. Halverson (District Office Agent) Geologist (Title)

Company Murphy Oil USA, Inc.

By Raymond Reede

Title District Manager

Address Box 547, Poplar, MT 59255

BOARD USE ONLY
API WELL NUMBER
25 01815 01510150
STATE COUNTY WELL

NOTE:—Reports on this form to be submitted to the appropriate District for approval.
DRILLING PERMIT EXPIRES SIX MONTHS FROM DATE OF APPROVAL

Form 2
Rev. 8-92

Submit In Quadruplicate To:
Montana Board of Oil and Gas Conservation
Billings or Shelby Office

ARM 36.22.307, 1003, 1004, 1011, 1013, 1103, 1222, 1301, 1306, and 1309

Sundry Notices and Report of Wells

Operator: Murphy Exploration & Production Company

Address: P.O. Box 547

City: Poplar State: MT Zip Code: 59255

Telephone Number: (406) 768-3612 Telefax Number: (406) 768-5497

Lease Name: East Poplar Unit No. 17

Lease Type (Private/State/Federal): Private

Well Number: No. 17

Unit Agreement Name: East Poplar Unit

Field Name or Wildcat:

Section, Township, and Range: Sec. 2, T28N, R51E

County: Roosevelt

RECEIVED
STATE OF MONT.
BILLINGS

Location of well (1/4-1/4 section and footage measurements):
CSESE
654 FSL/660 FEL
If directionally or horizontally drilled, show both surface and bottom hole locations)

API Number: 25 (State) 085 (County) 05050 (Well)

Well Type (oil, gas, injection, other): Oil

Indicate below with an X the nature of this notice, re

Notice of Intention to Change Plans	ibsequent Report of Mechanical Integrity Test	☐
Notice of Intention to Run Mechanical Integrity	bsequent Report of Stimulation or Chemical Treatment	☐
Notice of Intention to Stimulate or to Chemicall	sequent Report of Perforation of Cementing	☐
Notice of Intention to Perforate or to Cement	equent Report of Well Abandonment	☐
Notice of Intention to Abandon Well	uent Report of Pulled or Altered Casing	☐
Notice of Intention to Pull or Alter Casing	ent Report of Drilling Waste Disposal	☐
Notice of Intention to Change Well Status	nt Report of Production Waste Disposal	☐
Supplemental Well History	t Report of Change in Well Status	☐
Other (specify)	ent Report of Gas Analysis (ARM 36.22.1222)	☐
		☐

SRA Rec'd 2-22-94

Describe Proposed or Completed Operations:

Describe planned or completed work in detail. Attach maps, well-bore configuration diagrams, analyses, or other information as necessary. Indicate the intended starting date for proposed operations or the completion date for completed operations.

This well is currently shut in and has produced from the Madison B and C Zones which have watered out. There is a bad spot in the casing at 4013'.

It is proposed to plug and abandon this well in the following way. Set a CIBP at 3950' and dump 4 sacks of cement on top of it with a bailor. Cut the 5½" casing off at 1030', pump a 50 sack cement plug. Lay down casing. Pump a 6 sack plug at surface. Cut surface pipe off 4' below ground level and wels a ¼" steel plate over 9-5/8" casing.

BOARD USE ONLY

Approved MAR 01 1994
Date

Jon Kantar
Name

Chief Field Inspector
Title

The undersigned hereby certifies that the information contained on this application is true and correct:

2-23-94
Date

Raymond Reede
Signed (Agent)

Raymond Reede, District Manager.
Print Name & Title

Set a CI cement retainer at +/-3,950. Pump 50 sack of cement below CICR and leave 5 sack of cement on top. Role hole with 9 ppg fluid. Continue plugs as written.

Contact BOGC Field Inspector, J. D. Hodges at 765-1537 a least 24 hours before plugging operations commence. Operator should not delay plugging operations beyond 24 hours waiting for Field Inspector. If the job is canceled, after the Field Inspector has been notified of the plugging commencement time, please contact Field Inspector immediately.

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.
Zimmerman

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation
East Poplar Unit

1. Type of Well
[X] Oil Well [ ] Gas Well [ ] Other

8. Well Name and No.
EPU No. 17

2. Name of Operator
Murphy Exploration & Production Company

9. API Well No.
05050

3. Address and Telephone No.
P.O. Box 547, Poplar, MT 59255 (768-3612)

10. Field and Pool, or Exploratory Area
East Poplar UNit

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SE SE Section 2, T28N, R51E

11. County or Parish, State
Roosevelt
Montana

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

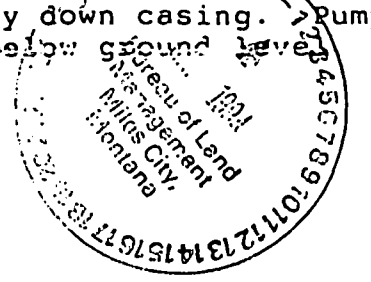
TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[X] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[ ] Other _____	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well is currently shut in and has produced from the Madison B and C Zones which have watered out. There is a bad spot in the casing at 4013'.

It is proposed to plug and abandon this well as follows; set a CIBP at 3950' and dump 4 sacks of cement on top of it with a bailor. Cut the 5½" casing off at 1030', pump a 50 sack cement plug. Lay down casing. Pump a 5 sack plug at surface. Cut surface pipe off 4' below ground level and weld a ¼" steel plate over 9-5/8" casing.



14. I hereby certify that the foregoing is true and correct
Signed Raymond Reedle Title District Manager Date 2-23-94

(This space for Federal or State office use)
Approved by Harold E. Dougan Title ADM - Minerals Date MAR 1 1994
Conditions of approval, if any:

ACCEPTED

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

JP

C: JD

Form 2
Rev. 8-92

Submit In Quadruplicate To:
Montana Board of Oil and Gas Conservation
Billings or Shelby Office

ARM 36.22.307, 1003, 1004, 1011, 1013, 1105, 1222, 1301, 1306, and 1309

FEB 1996
STATE OF MONTANA BOARD OF OIL & GAS CONS.

Sundry Notices and Report of Wells

Operator
Murphy Exploration & Production Company

Address
P.O. Box 547

City | State | Zip Code
Poplar | Mt | 59255

Telephone Number ( ) | Telefax Number ( )

Lease Name:
East Poplar Unit No. 17

Lease Type (Private/State/Federal):
Private

Well Number:
No. 17

Unit Agreement Name:
East Poplar Unit

Field Name or Wildcat:

Location of well (1/4-1/4 section and footage measurements):
659' from S Line and 660' from E Line
C SE SE Section 2
If directionally or horizontally drilled, show both surface and bottom hole locations)

Section, Township, and Range:
Sec. 2, T28N, R51E

County:
Roosevelt

API Number:
25 [redacted] 018 5 [redacted] 05 05 05 [redacted]
State County Well

Well Type (oil, gas, injection, other):
Oil

Indicate below with an X the nature of this notice, report, or other data:

Notice of Intention to Change Plans	☐	Subsequent Report of Mechanical Integrity Test	☐
Notice of Intention to Run Mechanical Integrity Test	☐	Subsequent Report of Stimulation or Chemical Treatment	☐
Notice of Intention to Stimulate or to Chemically Treat	☐	Subsequent Report of Perforation of Cementing	☐
Notice of Intention to Perforate or to Cement	☐	Subsequent Report of Well Abandonment	☒
Notice of Intention to Abandon Well	☐	Subsequent Report of Pulled or Altered Casing	☐
Notice of Intention to Pull or Alter Casing	☐	Subsequent Report of Drilling Waste Disposal	☐
Notice of Intention to Change Well Status	☐	Subsequent Report of Production Waste Disposal	☐
Supplemental Well History	☐	Subsequent Report of Change in Well Status	☐
Other (specify) _____	☐	Subsequent Report of Gas Analysis (ARM 36.22.1222)	☐
_____	☐	_____	☐

Describe Proposed or Completed Operations:
Describe planned or completed work in detail. Attach maps, well-bore configuration diagrams, analyses, or other information as necessary. Indicate the intended starting date for proposed operations or the completion date for completed operations.

Set cement retainer at 3962', mixed 55 sacks cement, pumped 50 sacks into retainer, pulled up 3' and spotted 5 sacks on top of retainer. Cut off casing at 900', lay down casing. Run tubing to 1020', pump 100 sacks cement, lay down tubing. Run 38' 1" pipe in surface casing. Mix and pump 15 sacks cement. Tag surface plug at 6'. Cut wellhead off 5' below ground level and weld 1/4" steel plate over it.

BOARD USE ONLY

Approved _____
Date

_____
Name | Title

The undersigned hereby certifies that the information contained on this application is true and correct:

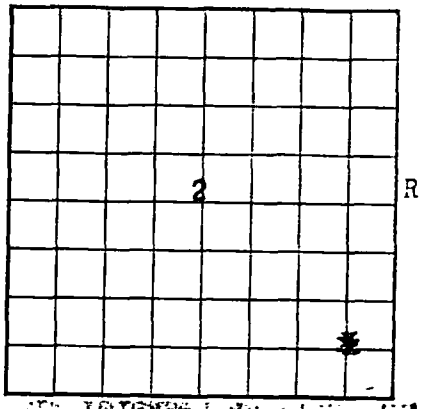
Feb. 20, 1996 — Raymond Reede
Date — Signed (Agent)

Raymond Reede — District Manager
Print Name & Title

RJD1

Budget Bureau No. 42-R355.5.
Approval expires 12-31-52.

Form 9-330



U. S. LAND OFFICE Billings
SERIAL NUMBER Fee Land
LEASE OR PERMIT TO PROSPECT

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

16

LOG OF OIL OR GAS WELL

LOCATE WELL CORRECTLY

Company Murphy Corporation Address Box 76, Poplar, Montana
Lessor or Tract East Poplar Unit Field East Poplar State Montana
Well No. 17 Sec. 2 T. 28 R. 51 Meridian County Roosevelt
Location 660 ft. {N. / S.} of S Line and 661 ft. {E. / W.} of E Line of Sec. 2 Elevation 2211 gr.
(Derrick floor relative to sea level.)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed Harold Nelson

Date April 10, 1953 Title District Production Supt.

The summary on this page is for the condition of the well at above date.

Commenced drilling February 21, 1953 Finished drilling March 26, 1953

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from A 5607 to 5620 No. 4, from C 5902 to T.D.
No. 2, from B-1 5735 to 5813 No. 5, from to
No. 3, from B-2 5757 to 5771 No. 6, from to

IMPORTANT WATER SANDS

No. 1, from to No. 3, from to
No. 2, from to No. 4, from to

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From	Perforated To	Purpose
9 5/8	36#	8	American	1018.93			5738	5748	
5 1/2	15.50#	8		5878	Larkin		5757	5768	

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
9 5/8	1031.93	400	Pump & Plug		
5 1/2	5890	300	Pump & Plug		

PLUGS AND ADAPTERS

Heaving plug—Material Length Depth set
Adapters—Material Size

FOLD | MARK

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from ..... feet to 5908 feet, and from ..... feet to ..... feet

Cable tools were used from ..... feet to ..... feet, and from ..... feet to ..... feet

DATES

..... , 19.. Put to producing March 27, 19 53

The production for the first 24 hours was 77.97 barrels of fluid of which 100 % was oil; ..... % emulsion; ..... % water; and ..... % sediment.

Gravity, °Bé. .....

If gas well, cu. ft. per 24 hours .....

Gallons gasoline per 1,000 cu. ft. of gas .....

Rock pressure, lbs. per sq. in. .....

EMPLOYEES

R. H. Massey, Driller

Pat Martin, Driller

G. B. Morris, Driller

..... , Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
SCHLUMBERGER TOPS			
Judith River	842		
Eagle	1240		
Niobrara	2103		
Carlisle	2253		
Greenhorn	2450		
Graneros	2650		
U. Muddy	2800		
Muddy Sand	3018		
Skull Creek	3063		
Dakota Silt	3232		
Morrison	3620		
Swift	3683		
Rierdon	4010		
Piper Shale	4363		
Piper Limestone	4440		
Gypsum Springs	4492		
Spearfish	4680		
Amsden	4820		
Heath	4940		
Otter	5110		
Kibbey Sand	5246		
Kibbey Limestone	5405		
Madison	5500		

(OVER)

FORMATION RECORD—Continued

DRILLING BIT RECORD

Bit No.	Make	Size	Serial No.	Type	From	To	Totco Footage	Degree
1	Hughes	12 1/2	Re-run		0	642		
2	Hughes	12 1/4	Re-run		642	1049		
3	Hughes	8 3/4	78803	OSC-1-J	1049	2400	2250	1/2°
4	Hughes	8 3/4	66854	OSC-1-J	2400	3258		
5	Hughes	8 3/4	808	OSC-1-J	3258	3543	3300	1/4°
6	Hughes	8 3/4	91991	OSC-J-T	3543	3635		
7	Hughes	8 3/4	3430	OWV-J	3635	3785		
8	Hughes	8 3/4	74424	OSQ-2-J	3785	4093		
9	Hughes	8 3/4	25078	OWV-J	4093	4375		
10	Hughes	8 3/4	74403	OSQ-2	4375	4520		
11	Hughes	8 3/4	41371	OWV-J	4520	4792		
12	Hughes	8 3/4	41368	OWV-J-T	4792	4951		
13	Hughes	8 3/4	25086	OWV-J-T	4951	5099		
14	Hughes	8 3/4	25717	OWC-J-T	5099	5138		
15	Hughes	8 3/4	41369	OWV-J-T	5138	5340		
16	Hughes	8 3/4	41366	OWV-J	5340	5479		
17	Hughes	8 3/4	25085	OWV-J	5479	5615		
18	Hughes	7 7/8	30662	OWS	5650	5727		
19	Hughes	7 7/8	30668	OWS	5764	5808		
20	Hughes	7 7/8	30664	OWS	5808	5880	5880	3/4°

CORE BIT RECORD

Core No.	Make	Size	Serial No.	From	To	Footage
Core # 1	Christensen	7 7/8	J-1846	5615	5650	35
Core # 2	Christensen	7 7/8	J-1846	5727	5764	37
Core # 3	Christensen	7 7/8	J-1846	5880	5908	28
				Total Footage:		100

MURPHY CORPORATION

E L E C T R O L O G D A T A

TYPE LOG	INTERVAL LOGGED
Electrical Survey 2"	100'-5907'
Electrical Survey 5"	450'-1037'
Electrical Survey 5"	2000'-5908'
Microlog 5"	2000'-5905'
Microlog 25"	5300'-5905'

TENTATIVE TOPS

Judith River	842	(+1369)
Eagle	1240	(+ 969)
Niobrara	2103	(+ 108)
Carlisle	2253	(- 42)
Greenhorn	2450	(- 239)
Graneros	2650	(- 439)
U. Muddy	2800	(- 589)
Muddy Sand	3018	(- 807)
Skull Creek	3063	(- 852)
Dakota Silt	3232	(-1021)
Morrison (?)	3620	(-1409)
Swift	3683	(-1472)
Rierdon	4010	(-1799)
Piper Shale	4363	(-2152)
Piper Limestone	4440	(-2229)
Gypsum Springs	4492	(-2281)
Spearfish	4680	(-2469)
Amsden	4820	(-2609)
Heath	4940	(-2729)
Otter	5110	(-2899)
Kibbey Sand	5246	(-3035)
Madison	5500	(-3289)
"A" Zone	5607	(-3396)
"B-1" Zone	5735	(-3524)
"B-2" Zone	5757	(-3546)
"C" Zone Intercrystalline Porosity	5902	(-3691)

CORE DESCRIPTIONS

5615-5650 Core No. 1 Rec. 35'

C.T. 30, 34, 29, 24, 21/ 19, 24, 21, 24, 22/ 24, 16, 15, 15, 15/ 15, 20, 20, 15, 20/ 20, 19, 16, 22, 20/ 13, 15, 15, 15, 18/ 17, 20, 15, 15, 15/

* 3' Limestone, dark grayish-black, very fine crystalline; several tight, incipient fractures fillwed with calcite; several black shale partings. No Show.

* 2.6' Limestone, dark brown-gray, fine crystalline; numerous short, irregular fractures; good odor and taste; medium golden-yellow fluorescence along fractures; spotty, golden-yellow fluorescence in mass of unit.

* 2' Limestone, medium brown-gray, medium crystalline; fair intercrystalline porosity and permeability; slight odor and taste; dull spotty, golden-yellow fluorescence in mass of unit; several black stylolitic partings.

* 4' Limestone, dark gray, fine crystalline, questionalbe intercrystalline porosity and permeability; few tight fractures in upper 1½ feet; several short, irregular fractures in lower 2½ feet with goododor and taste and greenish-yellow fluorescence; spotty, dull yellow fluorescence throughout mass of unit.

* 6' Limestone, brownish-gray, medium crystalline, faire intercrystalline porosity and permeability; scattered points of dull, yellow fluorescence; appears saturated.

* 2.6' Limestone, dark gray, fine crystalline, dense, several short, irregular fractures with bright, golden-yellow fluorescence along fracture planes; good odor and taste on fractures; several black shale and stylolitic partings.

* 5.6' Limestone, brownish-gray, oolitic to fine crystalline, fair porosity and permeability; fair oil odor and taste throughout; good, even, golden-yellow fluorescence in upper half, diminishing to spotty, yellow fluorescence in lower ½ of section; unit appears saturated; scattered fossil throughout unit.

5' Anhydrite, light gray, medium hard, dense; inclusions of black, dense limestone. No Show.

4.6' Dolomite, grayish-brown, amorphous to very fine crystalline, earthy; looks wet. No Show

Note: * Analyzed by Core Laboratories, Inc.

CORE DESCRIPTIONS

Core No. 2

5727-5764 Rec. 37'

C.T. 24, 37, 24/ 16, 15, 22, 20, 21/ 21, 22, 28, 20, 25/ 15, 23, 27, 19, 15/ 24, 23, 27, 27, 30/ 30, 30, 30, 36, 56/ 40, 58, 97, 59, 43/ 44, 31, 34, 82

12' Anhydrite, gray to black, hard and dense; numerous short, irregular, tight, recemented partings. No Show.

* 2' Limestone, medium brown, fine crystalline, questionable intercrystalline porosity and permeability; good oil odor and taste; spotty, medium golden-yellow fluorescence throughout unit; good oil stain throughout; numerous small brown calcite crystals.

* 2.6' Limestone, dark brown-gray, very fine crystalline, dense; numerous short, irregular, fairly tight fractures; good oil odor and taste along fractures; even, medium golden-yellow fluorescence along fracture planes.

* 2.6' Limestone, brown-gray, medium crystalline, fair intercrystalline porosity and permeability; good oil odor and taste; spotty, greenish yellow fluorescence throughout unit; oil beelding from entire unit.

11.6' Anhydrite, grayish-white, hard and dense; numberous short, irregular black, dolomitic shale partings. No Show

* 4' Limestone, dark brown gray, fine crystalline, questionable porosity and permeability; good oil odor and taste; even medium golden-yellow fluorescence throughout unit; oil bleeding from top 1 foot.

* 2.6' Limestone, dark brown-gray, very fine crystalline; numerous short, fairly tight, vertical fractures, with good oil stain, and medium golden-yellow fluorescence; several short, slightly open, vertical fractures, with good oil stain and medium golden-yellow fluorescence.

Note: * - Analyzed by Core Laboratories, Inc.

Core No. 3

5880-5908 Rec. 28'

C.T. 22, 23, 28, 30, 25/ 21, 28, 25, 18, 20/ 25, 26, 17, 23, 17/ 17, 20, 23, 25, 23/ 17, 13, 12, 12, 13/ 16, 12, 12

4.6' Dolomite, dark gray, micro to fine crystalline, dense, limy; several black shale partings. No Show.

2.6' Limestone, medium grayish-brown, fine crystalline, dense, irregular netwoork of short, tight fractures. No Show.

4' Limestone, medium gray-brown, fine crystalline, dense; one 6 inch oil stain 2 feet from top, with medium golden yellow fluorescence, otherwise, No Show.

CORE DESCRIPTIONS
Core No. 3 Continued:
5880-5908 Rec. 28'

* 9' Limestone, light brown gray, microcrystalline, dense; no show in mass of unit; one long, open, vertical fracture in lower 8 feet? with good oil stain, odor and taste; spotty, bright, golden-yellow fluorescence on fracture planes.

* 8' Limestone, dark brown to black, fine crystalline, medium intercrystalline porosity and permeability; good oil odor and taste; fairly even, medium to bright golden-yellow fluorescence throughout unit; one open, vertical fracture in lower 2 feet with spotty bright golden-uellow fluorescence.

Note: * - Analyzed by Core Laboratories, Inc.

Note: There were no Drill Stem Tests run on East Poplar Unit Well No. 17.

CORE ANALYSIS REPORTS

Company Murphy Corporation Date ON March 16, 1953 File No. F125-317

Well East Poplar Unit # 17 Date Off Mar. 20, 1953 Engrs. WBM

Field East Poplar Formation: Madison Elev. 2211' KB

County Roosevelt State Mont. Drlg. Fld. Water Base Mud

Cores Diamond Location C SE SE 2-28N-51E Remarks Service No. 9 (Special)

CORE ANALYSIS RESULTS

Sample No.	Depth Feet	Permeability Millidarcys Max.	Permeability Millidarcys 90°	Porosity Percent	Residual Saturation % Pore Space Oil	Residual Saturation % Pore Space Total Water
1	5615.0-16.5	<0.1	<0.1	0.5	0.0	20.0
2	16.5-17.8	<0.1	<0.1	1.7	0.0	83.3
3	17.8-18.8	2.1	1.2	3.3	8.7	52.2
4	18.8-20.3	2.3	0.3	2.0	5.0	15.0
5	20.3-21.8	0.9	0.2	3.0	6.7	40.0
6	21.8-22.9	1.1	<0.1	1.7	0.0	64.4
7	22.9-23.9	0.3	<0.1	0.5	0.0	60.0
8	23.9-25.0	0.5	0.1	1.8	11.0	33.3
25	5738.5-39.5	<0.1	<0.1	2.3	17.4	60.8
26	39.5-40.6	3.2	0.6	12.0	15.0	34.2
27	40.6-42.0	1.7	0.7	8.6	17.5	46.5
28	42.0-43.4	1.9	0.4	4.1	9.8	65.8
29	43.4-44.1	4.4	2.7	7.8	16.7	37.2
30	44.1-45.0	3.9	2.4	8.8	26.2	35.2
31	45.0-46.0	3.8	1.6	6.6	44.0	28.8
32	5757.5-58.8	4.8	1.9	7.8	12.8	77.0
33	58.8-60.0	4.9	1.2	9.2	15.2	43.5
34	60.0-61.5	2.9	1.5	9.7	18.6	38.2
35	61.5-63.0	0.8	0.3	5.0	18.0	50.0
36	63.0-64.0	0.9	0.6	4.6	15.2	56.5
37	5890.0-91.0	4.8	1.0	4.8	16.6	31.2
38	91.0-92.3	3.9	<0.1	2.8	10.7	46.5
39	92.3-93.7	5.6	0.6	7.3	5.5	34.3
40	93.7-95.3	<0.1	<0.1	9.1	15.4	27.5
41	95.3-96.3	<0.1	<0.1	8.9	3.4	39.2
42	96.3-97.4	<0.1	<0.1	6.0	8.5	48.2
43	97.4-98.0	<0.1	<0.1	4.3	20.9	23.3
44	98.0-99.0	1.3	<0.1	2.2	22.7	18.2

CORE ANALYSIS REPORTS

Service No. 4

Sample No.	Depth Feet	Permeability Millidarcys	Porosity Percent	Residual Saturation % Pore Space Oil	Total Water
(5615.0-25.0 Service No. 9 - Special Analysis)					
9	5625.5	0.0	1.9	0.0	42.1
10	26.5	8.2	13.6	1.5	52.2
11	27.5	1.7	18.3	1.1	44.3
12	28.5	5.4	17.1	1.2	47.3
13	29.5	1.6	6.4	0.0	71.9
14	30.5	19	13.1	6.1	44.3
15	31.5	220	15.7	14.6	29.3
16	32.5	1.2	10.7	7.5	20.6
17	33.5	1.5	4.1	0.0	19.5
18	34.5	5.9	13.3	7.5	18.8
19	35.5	225	19.0	13.2	33.7
20	36.5	7.0	12.9	0.0	50.4
21	37.5	7.5	7.9	0.0	44.3
22	38.5	10.0	9.5	0.0	21.0
23	39.5	15	19.5	0.0	58.0
24	40.5	10.0	7.7	0.0	18.2
(5890.0-99.0 Service No. 9 - Special Analysis)					
45	5899.5	0.0	1.2	0.0	91.7
46	5900.5	0.0	5.3	18.8	58.5
47	01.5	1.3	11.1	28.8	27.0
48	02.5	1.6	16.1	24.0	29.8
49	03.5	1.4	11.0	30.0	40.9
50	04.5	3.5	13.0	22.3	28.4
51	05.5	4.6	9.5	28.4	24.2
52	06.5	1.7	11.4	28.9	16.7
53	07.5	2.3	15.3	32.7	19.0

C O M P L E T I O N D A T A

Total Depth: 5905' Driller; 5908' Schlumberger; 5903' Casing; 5907' Lane Wells.

March 24, 1953: Went in hole with tubing and found top of cement at 5854'. Tested casing with 1075#; held o.k. Drilled float collar, 34' firm cement, guide shoe, and washed to bottom through 18' of open hole. Circulated two hours and came out of hole. Ran Lane-Wells Gamma Ray and Neutron Logs: Total depth by Lane-Wells, 5907.5'. Perforated off Lane-Wells collar log with 4 jet shots per foot as follows: B-1 Zone, 5738' to 5746' and B-2 Zone, 5757' to 5766'.

Ran junk basket. Set Baker Model "D" Production packer at 5870' on Wire Line. Went in hole with 188 joints (5835.43') of 2 3/8", EUE, 4.70#, J-55, 8rd. thrd., Range 2, National tubing, 3 subs, Otis choke, nipple, Baker latch-on finder sub, 3 Baker seal nipples, 3 Baker flush joint subs and 1 bull plugged sub spaced as follows:

Distance below R.K.B.	10.20'
Top joint of tubing	31.06'
3 tubing subs (4', 8', 10')	22.36'
187 joints of tubing	5804.37'
Otis choke nipple	1.35'
Baker Latch-on finder sub	.66'
Top of Baker Production Packer	5870.00'
2 Baker seal nipples	2.20'
1 Baker flush joint sub	7.06'
1 Baker flush joint sub	5.04'
1 Baker flush joint sub with 3' perforation at bottom	7.05'
1 Baker seal nipple	.85'
1 Baker flush joint ball plugged sub	2.46'
Bottom of tubing	5894.66'

NOTE: Baker Latch-on Sub requires 3000 to 4000# strain and 15 rounds to the right to release tubing from packer.

Seated lower seal rings in Baker packer and displaced mud in hole with water.

Acidized B Zones through perforations with 1000 gallons regular Dowell acid. Acid spotted on formation at 5:47 P.M., 3-25-53. Displaced acid into formation with oil. Maximum pressure 3000#. Injected acid at rate of 3 barrels per minute with 2800#. Pressure bled down to 1350# upon completion of job. Flowed well to pit. Acid back to surface in 23 minutes; new oil to surface in 35 minutes. Flowed to pit on 16/64" choke for 30 minutes with 250# T.P.. Flowed to pit on 13/64" choke for 30 minutes with 400# tubing pressure. Shut in pressure after 30 minutes, 500#. Lowered upper seal rings to seat in Baker packer.

COMPLETION DATA

Acidized C Zone, open hole, with 1000 gallons Dowell regular acid. Maximum pressure 2800#. Injected acid at rate of 5.0 barrels per minute with 2800#. Pressure bled down to 1600# upon completion of job. Flowed to pit. After cleaning to pit for 8 hours, well was flowing an estimated 150 bbls. of oil per day through a 16/64" choke with no pressure.

Stratafrac'd C Zone with 1000 gallons gel acid, 2000 gallons regular Dowell acid. Maximum pressure 2800#. Pressure bled down to 1500# upon completion of job. Flowed to pit. Acid back to surface in 15 minutes; new oil to surface in 55 minutes. Cleaned well to pit. On 16/64" choke, TP: 175# SICP: 750#. On 13/64" choke, TP: 475# SICP: 750#.

Turned both zones into tank at 6:15 P.M., 3-26-53. Rig released at 7:00 P.M. 3-26-53.

SUMMARY OF COMPLETION DATA

Casing:	Set 5856.95' of 5½" casing at 5890' with 300 sacks Pozmix with 2% gel.
Tubing:	Ran 188 joints (5835.43') 2 3/8", EUE, 4.70#, J-55 tibing, 3 subs, Otis choke, nipple, Baker latch-on finder sub, 3 Baker seal nipples, 3 Baker flush joint subs and 1 bull plugged sub. Bottom of tubing 5894.66'.
Packers:	Set Baker Model "D" Production Packer at 5870' on wireline.
Perforations:	B-1 Zone, 5738' to 5746', with 4 jet s.p.f. B-2 Zone, 5757' to 5766', with 4 jet s.p.f. (Lane-Wells measurements).
Acid Treatment:	B Zones: 1000 gallons regular, Dowell acid. C Zone: 1000 gallons regular, Dowell acid. Stratafrac'd with 1000 gallons gel acid, and 2000 gallons regular Dowell acid.
Type Completion:	DUAL: B Zone Flowing through annulus. C Zone Flowing through tubing.

P R O D U C T I O N T E S T D A T A

EAST POPLAR UNIT WELL NO. 17

March 27, 1953

C Zone--Tubing:

Time	Choke	BBLS. of Oil	BS&W %	Tbg.Press.	Csg. Press.	Rate BOPD
2 hours	7/64"	20.70	0.8	700#	775#(SI)	248.40
2 hours	9/64"	28.29	1.0	525#	775#(SI)	339.48
2 hours	11/64#	34.50	1.0	350#	775#(SI)	414.00

B Zone--Casing:

2 hours	7/64"	20.01	0.8	950#(SI)	770#	240.12
2 hours	9/64"	32.43	0.8	950#(SI)	625#	389.16
2 hours	11/64"	43.47	0.8	950#(SI)	550#	521.64

MUD PROGRAM SUMMARY

Total Mud Additives Used: Controlgel, 148 sacks; Controlbar, 179 sacks; Quebracho, 22 sacks; Caustic, 41 cans; Driscose 5 sacks; Phosphates, 2 sacks; Soda Bi-Carbonate, 3 sacks.

Total Cost:	$2289.99
Drayage:	178.41
Total Mud Cost:	$2468.29

Surface hole was drilled to a depth of 1049 feet with water. Set 9 5/8" casing at 1031.91 feet and cemented with 400 sacks of regular cement without difficulty. Drilled out from under surface pipe with water to a depth of 3000 feet where small amounts of Controlgel were added while drilling to approximately 4200 feet. At this depth, regular additions of caustic and quebracho were started to build up a "red" mud. Additions of Controlgel were continued for viscosity control and the caustic-quebracho mud program was maintained to a total depth of 5908 feet. Five and one half inch (5½") casing was set at 5890 feet with no hole trouble and was cemented with 300 sacks HOWCO Pozmix "A"; 3 sacks of soda bicarbonate were added while drilling cement which prevented any weight loss from cement contamination.

Mud characteristics while drilling to total depth follows:

Depth	Weight	Viscosity	Water Loss	PH
4400	10.0#/gal.	41 sec.	11.0 cc.	10.0
4720	10.1#/gal.	46 sec.	14.0 cc.	12.5
5017	10.1#/gal.	36 Sec.	14.0 cc.	12.5
5314	10.3#/gal.	42 sec.	16.0 cc.	12.3
5740	10.7#/gal.	58 sec.	24.0 cc.	12.0
5892	10.45#/gal.	65 sec.	17.2 cc.	12.0

SAMPLE DESCRIPTION

0-2000	No Samples.
2000-2350	Shale, medium gray, very silty, glauconitic, micaceous, slightly calcareous; some dark gray shale; traces of pyrite.
2350-2400	Shale, dark gray, micaceous, calcareous; shale, light gray, and micaceous.
2400-2570	No Samples.
2570-2620	Shale, dark gray; Shale, light gray, calcareous silty.
2620-2760	Shale, medium gray, silty, micaceous.
2760	Sample Top Muddy.
2760-3050	Sandstone, light gray, very fine grained, calcareous, salt and pepper appearance; black shale; medium gray, silty shale, as above.
3050	Sample Top Skull Creek.
3050-3190	Shale, dark gray to black, fissle and splintery; traces of gray, very fine grained sandstone.
3190	Sample Top Dakota.
3190-3500	Sandstone, light gray, very fine grained; shale, dark gray.
3500-3585	Sandstone, light gray, very fine grained,; shale dark gray.
3500-3585	Shale, black, splintery; shale, dark gray, silty; sandstone, as above.
3585	Sample Top Morrison.
3585-3630	Shale, dark gray to black.
3630-3700	Sandstone, white, very fine grained, slightly micaceous; shale, dark gray.
3700	Sample Top Swift.
3700-3890	Sandstone, grayish-white, very fine grained, glauconitic, calcareous; some dark gray shale; some light gray, silty shale in lower 30 feet of unit.
3890-4000	Shale, light gray, silty, calcareous; some dark gray shale.
4000	Sample Top Rierdon.
4000-4070	Sandstone, light grayish-white, very fine grained, calcareous; shale, light gray, calcareous.

SAMPLE DESCRIPTION

4070-4250	Sandstone, as above; shale, light green; trace of black shale; some tan, fine crystalline limestone in lower 50' of unit.
4250-4310	Shale, brown-gray, silty, calcareous; light green shale; some black shale.
4310-4355	Sandstone, fine grained, gray, calcareous; limestone, tan, fine crystalline; shale, as above.
4355	Sample Top Piper Shale.
4355-4435	Shale, red; traces of green and gray, calcareous shale.
4435	Sample Top Piper Limestone.
4435-4510	Limestone, medium brown, dense to fine crystalline; red and green shale.
4510	Sample Top Gypsum Springs.
4510-4550	Shale, red, green and gray.
4550-4680	Limestone, tan to brown, fine crystalline; traces of white, fine crystalline dolomitic limestone; shales, as above; traces of gray anhydrite in lower 40 feet.
4680	Sample Top Spearfish.
4680-4810	Sandstone, red, very fine grained; shale, green-gray, calcareous; traces of gray anhydrite.
4810	Sample Top Amsden.
4810-4830	Dolomite, pink, fine crystalline, limy; anhydrite and sandstone as above.
4830-4940	Limestone, light gray, fine crystalline; shale, gray, calcareous; traces of red and purple shale.
4940	Sample Top Heath.
4940-5060	Sandstone, red, very fine grained, calcareous; shale, calcareous, gray, red and purple.
5060-5100	Sandstone, white fine grained, calcareous; shales, as above.
5100	Sample Top Otter.
5100-5230	Limestone, tan to brown, fine crystalline; black, calcareous shale, vivid green shale, red, purple and gray calcareous shale; traces of white anhydrite in lower 50 feet.
5230	Sample Top Kibbey Sand.
5230-5350	Sandstone, red, fine grained, silty, calcareous in upper 20 feet; traces of gray anhydrite, tan limestone and red, green, black, and purple shale.

SAMPLE DESCRIPTION

5350-5390	Sandstone and red shale, as above.
5390	Sample Top Kibbey Limestone.
5390-5480	Limestone, tan, amorphous; sandstone, red, very fine grained; shales, black, green and red.
5480	Sample Top Madison.
5480-5530	Same as above with traces of gray anhydrite.
5530-5615	Limestone, dark gray, fine crystalline, becoming oolitic in lower 30 feet, anhydrite, light gray; dolomite, dark gray, very fine crystalline in lower 20 feet.
5615-5650	Core No. 1, recovered 35 feet.
5650-5727	Dolomite, gray-brown, fine crystalline; anhydrite, light gray, dense; limestone, dark gray, fine crystalline; shale, gray, calcareous.
5727-5880	Core No. 2, recovered 37 feet.
5764-5880	Limestone, light brown, fine crystalline, becoming dark brown in lower 50 feet; anhydrite, gray, dense,; dolomite, grayish-brown, fine crystalline; traces of red, and green shale.
5880-5908	Core No. 3, recovered 28 feet.
	Total Depth: 5905' Driller; 5908' Schlumberger; 5903' Casing; 5907½' Lane- Wells.

Location: C SW SW Sec 2-T28N-R51E
Spacing = 160 acres
Elevation: 2200' Gr. - 2211' K.B.
Spudded: 2-24-53
Completed: 3-26-53
T.D.: 5905' Driller = 5908' Schl.
Prod. Zones: B-1 (5738-46') B-2 (5757-66')
C-2 Open Hole

Coring Intervals:
#1 5615-5650 Rec. 35' A-3 & 4
#2 5727-5764 Rec. 37' B-1 & 2
#3 5880-5908 Rec. 28' C-2

Schlumberger Tops

	Depth	Datum	Thickness
Judith River	842	+1369	
Greenhorn	2450	- 239	
Muddy Sd	3018	- 807	
Dakota Silt	3232	-1021	
Piper Ls	4440	-2229	
Amsden	4820	-2609	
Heath	4940	-2729	
Otter	5110	-3899	
Kibbey Sd	5246	-3035	
Kibbey Ls	5405	-3194	
Madison	5500	-3289	
A-1	**5573	-3362	4'
A-2	**5592	-3381	6'
A-3	**5612	-3401	14'
A-4	*5626	-3415	18'
B-1	*5735	-3524	9'
B-2	*5757	-3546	14'
B-3	**5776	-3565	5'
B-4	**5809	-3598	4'
B-5	5844	-3633	?
C-1	**5883	-3672	?
C-2	*5892	-3681	?

**Probable prod. Zones (From DST structural position, etc.
*Shows

Drill Pipe Corrections (Made)
5905' Driller = 5908' SLM (+3')

Drill Stem Tests:

None

History Subsequent to Completion:

4-9-55: Blanked off C zone

WORKOVER HISTORY NO. 1

June 22, 1962

Lease & Well No. East Poplar Unit Well No. 17

Field East Poplar County Roosevelt State Montana

Well Location C SE SE Section 2, T28N, R51E

Status Prior to Present Job:

Date Completed March 26, 1953 Date Last Workover None

T.D. 5907½' P.B.T.D. 5907½' Producing Zone B Zones of Madison

Latest Test Pumping 442 BFPD, 95% water (22 BOPD, 420 BWPD)

Justification for Workover:

To lower water cut and increase production. (This workover was recommended by Engineering Workover Committee.)

Summary of Workover:

6-05-62 5907.5' TD. MI & RU plg unit to DOC sqz B zones, then swb & pmp tst.

6-06-62 5907' TD. Pld rods & tbg out of hole. Started in hole w/HOWCO R.T.T.S. pkr. Shut down due to heavy rain.

6-07-62 5907' TD. DOC sqzd B perf 5738-46', 5757-66'. Finished going in hole w/HOWCO R.T.T.S. pkr. Set pkr at 5776'. Tstd csg & DR plug below perf to 2000#, held ok. Pinpointed perf w/pkr. Sptd 3 bbls of gel on DR plug at 5870'. Reset pkr at 5732'. Press csg to 1200#. Broke form w/SW at rate of 4.5 BPM at 2200#. Disp wtr w/oil at 5777'. Sptd 10 bbls of crude oil w/10 gals of HOWCO hyflo added followed w/3 bbls diesel. Reset pkr at 5732'. Mixed 40 sxs of reg cmt followed w/3 bbls diesel oil. Min sqz press - 1800#. Max - 2600# w/35 sxs in form. Rev out 1 bbl of cmt slurry holding 1000# back press. Washed down to 5777'. Reset pkr at 5732'. Broke form w/1 bbl at 3000#. Bled to 1200# in 5 min. Bled csg to 500#. Closed well in overnight.

6-08-62 5907' TD. Swb tstd DOC sqz. Swbd at 3500' due to mix string of tbg. Swb down to 3500', top of 2" tbg. Swb rate as follows:
1st hr - 2.85 BPH, 68 BOPD, no wtr
2nd hr - 2.28 BPH, 54 BOPD, no wtr
3rd hr - 2.28 BPH, 54 BOPD, no wtr
Swbd total of 28 bbls of form fluid. Rel pkr. Pld same out of hole. Ran tbg & rods 2"x1½"x16' insert pmp. Seating nipl at 5616'.

6-09-62 5907' TD. Well pmpd 96 BO from between csg & tbg overnight & pmpd off.

6-10-62 5907' TD. Pmpd 25 BO down csg. Would not pmp fluid back. Waiting on plg unit to pull pmp.

Summary of Workover: (Continued)

6-11-62 5907' TD. Fished rods. Pmpd 16 hrs - made 30 BF. W/C this a.m. 18%.

6-12-62 5907' TD. No tst.

6-13-62 5907' TD. Pmpg at rate of 28 BFPD, 50% wtr (14 BO, 14 BW).

6-14-62 5907' TD. Rods parted. 6 hr tst pmpd 12 BFPD, 50% wtr (6 BO, 6 BW).

6-15-62 5907' TD. Fish rods.

6-16-62 5907' TD. Pmpg at rate of 17 BFPD, 17% wtr (14 BOPD, 3 BWPD).

6-17-62 5907' TD. Pmpg at rate of 13 BFPD, 17% wtr (11 BOPD, 2 BWPD).

6-18-62 5907' TD. On 24 hr tst 16 BFPD, 10% wtr (14 BOPD, 2 BWPD).

6-19-62 5907' TD. Pmpg at rate of 13 BFPD, 18% wtr (11 BOPD, 2 BWPD).

6-20-62 5907' TD. Pmpg at rate of 12 BFPD, 19% wtr (10 BOPD, 2 BWPD).

6-21-62 5907' TD. 24 hr tst pmpg at the rate of 16 BFPD, 24% wtr (12 BO, 4 BW). Pmpg w/1½" bore pmp 14½x34" stroke. THIS IS THE WORKOVER POTENTIAL - TO DROP FROM REPORT.

Recap of Workover:

1. Final Perforations: B - 5738-46'; B - 5757-66' (unchanged)

2. Final PBTD: 5907½" (unchanged)

3. Initial Potential after Workover: Pmpg 16 BFPD, 24% water (12 BOPD, 4 BWPD)

4. Geological name of Producing Zone: B & B zones of Madison Formation

5. Downhole Equipment:

Tbg Record -	RKB	10.00'
	113 Jts 2 7/8" Tbg	3528.34'
	70 Jts 2 3/8" Tbg	2077.70'
	1 Seating Nipl	1.10'
	1 Perf Nipl	3.00'
	1 Jt 2 3/8" Tbg	31.53'
	1 HOWCO Tbg Anchor	2.20'
	Bottom of Tbg	5653.87'
Rod Record -	52 - 7/8"	1300'
	96 - 3/4"	2400'
	76 - 5/8"	1900'
		5600'

Pump Data - 2" x 1½" x 16' Insert Pump

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WORKOVER HISTORY NO. 2

August 10, 1962

Lease & Well No. East Poplar Unit Well No. 17

Field East Poplar County Roosevelt State Montana

Well Location C SE SE Section 2, T28N, R51E

Status Prior to Present Job:

Date Completed March 26, 1953 Date Last Workover June 22, 1962

T.D. 5907½' P.B.T.D. 5907½' Producing Zone B-1 & 2 of Madison Formation

Latest Test Pumping 14.65 BFPD, 34% wtr (9.67 BOPD, 4.98 BWPD)

Justification for Workover:

To reopen and produce the C-3 zone.

Summary of Workover:

7-30-62 5907' TD. MI & RU plg unit. Pld rods & tbg out of hole. Ran American overshot w/3 1/16" grapples in hole to fish DR plug. Closed well in overnight.

7-31-62 5907' TD. Circ hole w/SW at 5700'. Tag top of DR plug 5870'. Washed & circ down over plug. Unable to pick up same w/overshot. Pld out of hole to check tool. Grapples in catch position & worked OK. Shut down overnight.

8-01-62 5907' TD. Ran Bowen overshot in hole w/3 1/16" grapples. Attempted to wash & rotate over DR plug at 5870'. Unable to get over plug. Pld out of hole. Btm of overshot indicated 2 3/8" collar broke off fishing neck. Shut down overnight.

8-02-62 5907' TD. Ran 10' of 4½" wash pipe w/4 5/8" shoe to cut out Baker Model "D" pkr & DR plug. Rig down to service unit wells.

8-03-62 5907' TD. Rigged up unit w/rotary. Shut down overnight.

8-04-62 5907' TD. Milled on Baker Model "D" pkr 6½ hrs. Pld out of hole to check shoe. Ran 4 5/8" flat btm shoe in hole. Shut down overnight.

8-05-62 5907' TD. Milled on Model "D" pkr 8 hrs. Fish plugged off circ in 4½" wash pipe. Started out of hole w/pkr stuck in wash pipe. Shut down overnight.

8-06-62 5907' TD. Started out of hole. Fish hung up & pld out of wash pipe. Went in hole. Pushed pkr thru guide shoe on 5½" csg at 5890'. Pld tbg out of hole. Shut down overnight.

Summary of Workover: (continued)

8-07-62 5907' TD. Ran Baker WL JB on sand line to 5890'. Ran Baker Model "N" prod pkr on tbg. Set top of pkr at 5835'. Pin collar on top of pkr, seating nipl at 5773'. Flow tst 1 hr to tst tk. Flwd at rate of 218 BFPD, 80% w/c (43 BOPD, 175 BWPD). Ran 2" x 1½" x 16' insert pmp.

Well Test

	Choke	F/P	BFPD	W/C	BOPD	BWPD
8-08-62	1/4"	50#	204	63	76	129
8-09-62	1/4"	50#	135	66	46	89
8-10-62	1/4"	79#	303	79	64	240

Recap of Workover:

1. Final Perforations: (open hole) 5890-5907.5'

2. Final PBTD: 5907½'

3. Initial Potential after Workover: Flwg 303 BFPD, 79% wtr (64 BOPD, 240 BWPD)

4. Geological name of Producing Zone: C Zone

5. Downhole Equipment: Baker Model "N-1" pkr, size 43-26, product # 4 1/6-01.
Seal assembly w/2 sets of seals, size 40-26, product #[illegible]-01.

Tbg Record -	RKB	10.00'
	121 Jts 2 7/8" Tbg	3806.20'
	66 Jts 2 3/8" Tbg	1956.21'
	1 - Seating Nipl	1.10'
	2 Jts 2 3/8" Tbg	61.49'
	Bottom of Tbg	5835.00'

Rod Record -	75 - 5/8"	1875'
	95 - 3/4"	2375'
	20 - 7/8" Plain	500'
	39 - 7/8" Scrapers	975'
	229	5725'

Pump Data - 2" x 1½" x 16' Insert Pump.

RECAP OF WORKOVER:

Final Perforations: B-1 @ 5738-44 , B-2 @ 5757-66' 5890-5907.5' (open hole)

Final PBTD: ----------

Geological Name of Producing Zone: "C" Zone - B-1 and B-2 Zones

Tubing Record:

184	joints of 2-7/8", 6.50#, Cond. 2, J-55, Range 2, 8rd. thrd. EUE Tubing.	5659.21
1	2-7/8" Cond. 2 Seating Nipple	1.10
1	2-7/8" Cond. 2 Perforated Tubing Nipple	3.12
1	joint of 2-7/8" Cond. 2, 6.50#, J-55, Range 2, 8rd. thrd. EUE Tubing.	31.90
1	MONCO Tubing Anchor - Bull Plugged	3.55
		5698.80
	Below RKB	10.00
		5708.88

Rod Count:

56 - 7/8" Plain Rods
69 - 3/4" Plain Rods
99 - 5/8" Plain Rods

Subs - 10', 8', 2', 2'.

June 22, 1962

& Well No. East Poplar Unit Well No. 17

East Poplar County Roosevelt State Montana

Location C SE SE Section 2, T28N, R51E

to Prior to Present Job:

Completed March 26, 1953 Date Last Workover None

5907½' P.B.T.D. 5907½' Producing Zone B-1 & 2 Zones of Madison

st Test Pumping 442 BFPD, 95% water (22 BOPD, 420 BWPD)

ification for Workover:

lower water cut and increase production. (This workover was recommended by neering Workover Committee.)

mary of Workover:

5-62 5907.5' TD. MI & RU plg unit to DOC sqz B-1 & 2 zones, then swb & pmp tst.

6-62 5907' TD. Pld rods & tbg out of hole. Started in hole w/HOWCO R.T.T.S. pkr. Shut down due to heavy rain.

7-62 5907' TD. DOC sqzd B-1 & 2 perf 5738-46', 5757-66'. Finished going in hole w/HOWCO R.T.T.S. pkr. Set pkr at 5776'. Tstd csg & BP plug below perfs to 2000#, held ok. Pinpointed perf w/pkr. Sptd 3 bbls of gel on BP plug at 5870'. Reset pkr at 5732'. Press csg to 1200#. Broke form w/SW at rate of 4.5 BPM at 2200#. Disp wtr w/oil at 5777'. Sptd 10 bbls of crude oil w/10 gals of HOWCO hyflo added followed w/3 bbls diesel. Reset pkr at 5732'. Mixed 40 sxs of reg cmt followed w/3 bbls diesel oil. Min sqz press - 1800#. Max - 2600# w/35 sxs in form. Rev out 1 bbl of cmt slurry holding 1000# back press. Washed down to 5777'. Reset pkr at 5732'. Broke form w/1 bbl at 3000#. Bled to 1200# in 5 min. Bled csg to 500#. Closed well in overnight.

-8-62 5907' TD. Swb tstd DOC sqz. Swbd at 3500' due to mix string of tbg. Swb down to 3500', top of 2" tbg. Swb rate as follows:
1st hr - 2.85 BPH, 68 BOPD, no wtr
2nd hr - 2.28 BPH, 54 BOPD, no wtr
3rd hr - 2.28 BPH, 54 BOPD, no wtr
Swbd total of 28 bbls of form fluid. Rel pkr. Pld same out of hole. Ran tbg & rods 2"x1½"x16' insert pmp. Seating nipl at 5616'.

-9-62 5907' TD. Well pmpd 96 BO from between csg & tbg overnight & pmpd off.

-10-62 5907' TD. Pmpd 25 BO down csg. Would not pmp fluid back. Waiting on plg unit to pull pmp.

Note: The C-zone was blanked off w/ BK plug at 5870 ON 4-9-55 while producing

Summary of Workover: (continued)

6-11-62 5907' TD. Fished rods. Pmpd 16 hrs - made 30 BF. W/O this a.m. 18%

6-12-62 5907' TD. No test.

6-13-62 5907' TD. Pmpg at rate of 28 BFPD, 50% wtr (14 BO, 14 BW).

6-14-62 5907' TD. Rods parted. 6 hr test pmpd 12 BFPD, 50% wtr (6 BO, 6 BW).

6-15-62 5907' TD. Fish rods.

6-16-62 5907' TD. Pmpg at rate of 17 BFPD, 17% wtr (14 BOPD, 3 BWPD).

6-17-62 5907' TD. Pmpg at rate of 13 BFPD, 17% wtr (11 BOPD, 2 BWPD).

6-18-62 5907' TD. On 24 hr test 16 BFPD, 10% wtr (14 BOPD, 2 BWPD).

6-19-62 5907' TD. Pmpg at rate of 13 BFPD, 18% wtr (11 BOPD, 2 BWPD).

6-20-62 5907' TD. Pmpg at rate of 12 BFPD, 19% wtr (10 BOPD, 2 BWPD).

6-21-62 5907' TD. 24 hr test pmpg at the rate of 16 BFPD, 24% wtr (12 BO, 4 BW). Pmpg w/1½" bore pmp 14½x34" stroke. THIS IS THE WORKOVER POTENTIAL - TO DROP FROM REPORT.

Recap of Workover:

1. Final Perforations: B-1 - 5738-46'; B-2 - 5757-66' (unchanged)

2. Final PBTD: 5907½" (unchanged)

3. Initial Potential after Workover: Pmpg 16 BFPD, 24% water (12 BOPD, 4 BWPD)

4. Geological name of Producing Zone: B-1 & B-2 zones of Madison Formation

5. Downhole Equipment:

Tbg Record -	RKB	10.00'
	113 Jts 2 7/8" Tbg	3528.34'
	70 Jts 2 3/8" Tbg	2077.70'
	1 Seating Nipl	1.10'
	1 Perf Nipl	3.00'
	1 Jt 2 3/8" Tbg	31.53'
	1 HOWCO Tbg Anchor	2.20'
	Bottom of Tbg	5653.87'
Rod Record -	52 - 7/8"	1300'
	96 - 3/4"	2400'
	76 - 5/8"	1900'
		5600'

Pump Data - 2" x 1½" x 16' Insert Pump

WORKOVER HISTORY NO. 3

Lease and Well Number: East Poplar Unit No. 17

Field: East Poplar Unit County: Roosevelt State: Montana

Well Location: C SE SE Section 2, T28N, R51E

STATUS PRIOR TO PRESENT JOB:

Date Completed: March 26, 1953 Date Last Workover: August, 1962

T.D. 5907½' PBTD: -- Producing Zone: C-3 Zone

Perforations: "C-3" Zone 5890-5907½' Open Hole

Cumulative Production of Present Zone: "C-3" Zone 38,870 BO. 240,101 MW

B-1 and B-2 Zones 239,095 BO. 764,073 MW.

JUSTIFICATION FOR WORKOVER:

To fish tubing. Fish rods, tubing and cutting over and fishing out Model "M" Packer.

SUMMARY OF WORKOVER:

11-10-65 5907' T.D. M.I.R.U. Pulling Unit to fish rods. Rods parted at 3838' badly worn 3/4" box. Attempted tofish rods. Fishing tool pulled off of fish 75' off bottom. Unable to recover fish. Pulled out of hole. Slips pulled out of overshot. Attempted to release latch on in Baker Model "M" Packer. Rod cut joint of 2-7/8" tubing. Pulled out of collar at 3713'. Shut down overnight.

11-11-65 5907' T.D. Pulled 1 jt. of 2-7/8" tubing. Ran fishing tool dressed with 1-7/16" slips. Unable to get down to fish. Pulled out of hole. Ran chisel on sinker bars and jars. Spudded down to top of fish. Pulled out of hole. Ran overshot dressed with 1-7/16" slips. Got over fish. Unable to hold same. Shut down overnight.

11-12-65 5907' T.D. Pulled rods and tubing out of hole. Picked up W.O string of 2-7/8" N-80 Tubing. Screwed into collar at 3713'. Ran overshot dressed with 1-3/8" slips. Got over fish at 3838'. Unable to hold same. Pulled out of hole. Shut down overnight.

11-13-65 5907' T.D. Ran Bowen Overshot dressed with 1-7/16" grapple. Got over fish. Grapple would not hold. Made trip. Ran overshot dressed with 1-3/16" grapple. Would not go overfish. Made trip to change grapple to 1-3/8". Got over fish at 3838'. Pulled 5,000# above weight of rods. Grapple pulled off of fish. Pulled out of hole. Shut down overnight.

11-14-65 5907' T.D. Ran Obannon Overshot dressed with 1-3/8" slips. Got over fish at 3838'. Pulled 2,000# strain on rods. Attempted to back off rods. 5/8" worn rod twisted off at 4151'. Pulled out of hole. Rec. 313' of 5/8" rods. Shut down W.O.. Need special tool to go over 5/8" rod body.

11-15-65 5907' T.D. Ran special tool 1-29/32 O.D. x 1.6100 I.D. x 20' length with Bowen Overshot 1-7/16 Grapple in hole to 3871'. Tool would not go. Worked tool up hole to 3822'. Freed up. Ran chisel on sinker bars and jars. Found tight place at 3816'. Spudded through and went down to 3986'. Unable to spud through. Jars indicated a short bend in tubing at 3986'. Ran McCullough 1-3/4" Chemical Cutter to 3824.50'. Unable to get down. Ran Bowen Overshot on Sinker Bars. Jared through at 3824.50'. Pulled out of hole. Put Bowel on overshot. Ran same through tight place at 3824.50'. Pulled out of hole. Ran McCullough Chemical Cutter at to 3824.50. Would not go. Spudded with tool. Unable to get down. Pulled out of hole. Shut down at 10:00 PM.

11-16-65 5907' T.D. Ran Acme 1-7/8" Inside Tubing Cutter on rods. Worked tool through tight places in tubing from 3824' to 3992'. Picked up 12'. Attempted to cut tubing at 3980'. Set tool rotated 30 mins.. Tool hung up. Picked up rotated tool free. Set down rotated 1-1/2 hrs.. Lost torque. Tryed to release tool. Would not release. Worked and rotated with up strain on tool. Twisted cutter mandle into at knifes. Pulled out of hole. Made dummy run with McCullough Sinker Bars. Ran Chemical Cutter. Cut 2-7/8" tubing at 3774'. Shut down overnight.

11-17-65 5907' T.D. Pulled tubing out of hole. Rec. 46' of 2-7/8" tubing. Ran Bowen Overshot dressed with 3 21/32 grapple on one jt. of 4-1/2 O.D. Wash Pipe. Got over fish at 3774'. Caught 2-7/8" collar at 3790'. Pulled weight to 50,000# to set grapple. Set wt. on 42,000#. Attempted to release Baker Model "H" Latch On. 2-3/8" Tubing twisted off in rod cut joint at 3992'. Pulled out of hole. Rec. 229' of fish. Dressed overshot with 3.1/16 Grapple. Ran overshot. Got over collar at 3994'. Ran 1 29/32 Bowen Overshot on Sinker Bars. Tryed to get in 2-3/8" tubing. Would not go. Ran overshot dressed with 1 7/16" Grapple on rods. Unable to get in 2-3/8" tubing. Pulled rods. Shut down overnight.

11-18-65 5907' T.D. Released Bowen Overshot. Pulled out of hole. Ran Acme outside Tubing Cutter on 141' 4 1/2" O.D. Wash Pipe. Got over fish at 3992'. Cut tubing at 4116'. Rec. 124' of fish. Ran Bowen Overshot with 2-3/8" Grapple. Got overfish at 4116'. Ran Bowen Rod Overshot dressed with 5/8" Grapple on 20' of Extention. Got over fish at 4151'. Unseated pump. Worked same out of hole.

11-18-65 5907' T.D. Ran Sinker Bars on Sand Line to 5000' to check for junk in 2-7/8" x 2-3/8" Swedge. Pulled out of hole. W.O. McCullough Chemical Cutter 7 hours. Ran 1-3/4" O.D. Chemical Cutter. Unable to work cutter through seating nipple at 5772'. Cut tubing at 5768'. Pulled out of hole. Recovered 1652' of fish.

11-19-65 5907' T.D. Ran Bowen Overshot with 3-1/16 Grapple on one (1) jt. of 4-1/2" O.D. Wash Pipe. Got over fish at 5768'. Worked and torqued tubing in an attempt to release Baker Model "N" Packer for 3 hours. Unable to release same. Made trip. Ran Acme 2-3/8" Tubing Cutter on 85' of 4-1/2" O.D. Wash Pipe. Got over fish at 5768'. Checked top of packer for fill up. Pulled into collar at 5805'. Cut and recovered 34' of fish. Ran Bowen Overshot on one (1) jt. of 4-1/2" O.D. Wash Pipe with 2-3/8" Grapple (no stop) Safety Jt. and Johnston Oil Jars. Got over fish at 5806'. Jared and torqued on packer 3 hours. Setting jars off at 70,000# strain. Torqued tubing to 11-1/2 rounds with Power Swivel working torque to bottom. Grapple released would not hold. Pulled up 27'. Caught top of 2-3/8" tubing. Slacked down to top of Baker Model "N" Packer. Worked up and down with no drag on Grapple. Picked up caught top of fish. Jared and torqued 2 hours. Grapple pulled off of fish. Pulled out of hole. Found grapple pulled together and dull.

11-20-65 5907' T.D. Prepairing to run Acme Clusturite Shoe and Wash Pipe. Layed down 2-7/8" workover pipe and 2-3/8" tubing. S.I. overnight. Unable to get crew to work nights.

11-21-65 5907' T.D. Prepairing to drill out Model "N" Packer and fish same. Picked up Acme Clusterite Shoe with 2 joints of wash pipe and work over string. Went in hole and drilled on packer at 5835'. Made approximately 2-1/2feet in 3-1/2 hours. Could not get night crew. S.I. overnight

11-22-65 5907' T.D. Prepairing to lay down workover string and run production string. Finished cutting out Model "N" Packer at 5825'. Packer dropped to bottom. Came out of hole and put on Acme 4-11/16 Overshot with 2-3/8" Grapple and went in hole. Caught fish on bottom and came out of hole. Went in hole with workover string. S.I. overnight.

11-23-65 5907' T.D. Prepairing to run rods and start pumping. Picked up 67 joints of Cond. 2 2-7/8" tubing and went in hole. Hydro-tested the next 119 joints of 2-7/8" tubing to 5000#. Found 4 bad joints. Set Anchor at 5698' with 20,000# strain . S.N. at 5660'. S.I. overnight.

11-24-65 5907' T.D. Ran rods and 2-1/2" x 1-1/2" x 16' Insert Pump. Put well pumping at 12:00

July, 1972

EAST POPLAR UNIT NO. 17

WORKOVER HISTORY NO. 6

Well Name and Number: East Poplar Unit No. 17

Field: East Poplar Unit County: Roosevelt State: Montana

Well Location: C SE SE Section 2, T28N, R51E

SUMMARY PRIOR TO PRESENT JOB:

Date Completed: March 26, 1953 Date Of Last Workover: November, 1965

T.D.: 5907½' PBTD: ----- Cumulative Production: B-1 & 2 239,153 BO

754,073 BW B-1, 2 & C Zones 67,583 BO 509,412 BW

Latest Test: June 13, 1972 112 BFPD 9 BOPD 103 BWPD 92% W.C.

JUSTIFICATION FOR WORKOVER:

East Poplar Unit No. 17 is producing at the rate of 9 BOPD which is uneconomical.

Block off the C-Zone with a bridge plug and the B-2 Zone with a bridge plug. Reperforate and acidize the B-1 Zone. A 20 BOPD increase is expected from this zone.

SUMMARY OF WORKOVER:

7-7-72 5907' PBTD Preparing to move in and rig up pulling unit.

7-8-72 5907' PBTD Preparing to reperforate.
Moved in and rigged up pulling unit. Pulled rods and tubing.

7-9-72 5907' PBTD Preparing to acidize.
Ran Wireline junk basket and gauge ring to 5810'. Set Baker C.I. bridge plug at 5820' with 1 sack of cement on top to block off C-Zone. Set Baker C.I. bridge plug at 5753' with 1/2 sack of cement on top to plug B-2 Zone. Reperforated the B-1 Zone with Wireline 30 gram casing gun, 1 hole per foot, from 5730' to 5742'. Picked up Baker retrievomatic and hydrotested tubing in hole. Set packer and swabbed tubing to 4200'. No fillup between runs. S.I. overnight.

7-10-72 5749' PBTD Pump Testing
Made run with swab. Had 400' of fillup overnight. Lowered tubing and tagged plug. Acidized well with 750 gallons of 15% regular Dowell acid with inhibitor and emulsion breaker added. Est. injection rate of 0.2 BPM at 3000 PSI. Pressure broke to 2500 PSI with 5 bbls. acid in formation. Reached maximum of acid at 1 BPM and 2800 PSI. Overflushed acid with 8 bbls. of formation fluid. Immediate S.I. 2250 PSI. 15 Min. S.I. 800 PSI. Let acid soak for 1 hour. Swabbed acid water back. Pulled packer and run tubing and rods and put well to pumping. (Set 1-3/4" tubing pump at 5000', Well running over while running rods.)

7-11-72 5749' PBTD Pump Testing
no Test - Well pumping annulus fluid.

7-12-72 5749' PBTD Pump Testing
3 Hour Test - Pumped 21.79 BF = 174 BFPD 5 BOPD 169 BWPD 97% W.C.

7-13-72 5749' PBTD Pump Testing
6 Hour Test - Pumped 40.91 BF = 164 BFPD 5 BOPD 159 BWPD 97% W.C.

7-14-72 5749' PBTD Pump Testing
3 Hour Test - Pumped 21.49 BF = 172 BFPD 5 BOPD 167 BWPD 97% W.C.

7-15-72 5749' PBTD Pump Testing
24 Hour Water Draw Test Pumped 169.20 BFPD 4 BOPD 164.20 BWPD 97% W.C.

7-16-72 5749' PBTD Pumping
No Test

7-17-72 5749' PBTD Pump Testing
3 Hour Test - Pumped 22.8 BF = 182 BFPD 5 BOPD 177 BWPD 97% W.C.

7-18-72 5749' PBTD Pump Testing
4 Hour Test - Pumped 30.46 BF = 183 BFPD 9 BOPD 174 BWPD 95% W.C.
Fluid level shot - Fluid Level at 120'

7-19-72 5749' PBTD Pump Testing
3 Hour Test - Pumped 22.88 BF = 183 BFPD 11 BOPD 172 BWPD 94% W.C.

7-20-72 5749' PBTD Pump Testing
4 Hour Test - Pumped 48.32 BF = 290 BFPD 26 BOPD 264 BWPD 91% W.C.

7-21-72 5749' PBTD Pump Testing
7 Hour Test - Pumped 81.82 BF = 280 BFPD 25 BOPD 255 BWPD 91% W.C.

7-22-72 5749' PBTD Pump Testing
24 Hour Test Pumped 269 BFPD 24 BOPD 245 BWPD 91% W.C.

7-23-72 5749' PBTD Pump Testing
24 Hour Test Pumped 268 BFPD 21 BOPD 247 BWPD 92% W.C.

7-24-72	5749' PBTD	Pump Testing 4 Hr. Test Pumped 45.67 BF = 274 BFPD 22 BOPD 252 BWPD 92% W.C.
7-25-72	5749' PBTD	Pump Testing 4 Hr. Test Pumped 34.5A BF = 276 BFPD 22 BOPD 254 BWPD 92% W.C Fluid level at 1116'.
7-26-72	5749' PBTD	Pump Testing No Test
7-27-72	5749' PBTD	Pumping - No Test
7-28-72	5749' PBTD	Pumping - No Test
7-29-72	5749' PBTD	Pumping - No Test
7-30-72	5749' PBTD	Pumping - No Test
7-31-72	5749' PBTD	Pumping - No Test
8-1-72	5749' PBTD	Pump Testing 4 Hr. Test - Pumped 47.62 BF = 286 BFPD 263 BWPD 23 BOPD 92% W.C. Workover Potential - To Drop From Report

RECAP OF WORKOVER:

Final Perforations:	5738' to 5742'
Final PBTD:	5749'
Workover Potential:	286 BWPD 263 BWPD 23 BOPD 92% W.C.
Geologic Name Of Producing Zone:	B-1 Zone of the Madison
Results Of Workover:	Workover Successful - Oil production was increased from 9 BOPD to 23 BOPD.

EAST POPLAR UNIT NO. 17

WORKOVER HISTORY NO. 4

Well Name and Number: East Poplar Unit No. 17

Field: East Poplar Unit County: Roosevelt State: Montana

Well Location: C SE SE Section 2, T28N, R51E

STATUS PRIOR TO PRESENT JOB:

Date Completed: March 26, 1953 Date of Last Workover: July 1972

T.D.: 5907½' Cumulative Production: B-1 & 2 239,153 BO

764,073 BW B-1, 2 & C Zones 67,633 BO 511,029

Latest Test: 648 BWPD

JUSTIFICATION FOR WORKOVER:

The tubing is stuck in the hole on this well with a good chance of the casing collapsed. It is proposed to jar the tubing out of the hole, swedge out the casing and set a packer over the B-1 Zone and pump test. If this zone is noncommercial, set a bridge plug at 5730' and perforate the A-4 Zone 5628'-32' and 5636'-5640'. If necessary, acidize with 250 gallons 15% HCL acid.

SUMMARY OF WORKOVER:

8-24-89 MIRUPU Try to unseat pump, couldn't get it loose. Back off of rods @ 2625'. Rig up to pull tbg couldn't release anchor. Run in hole with rods, screw into rods and hang well on unit. Try to unseat pump with unit, pulled threads on rod @ 2625'. POH with rods. SDFD.

8-25-89 Try to work anchor free, couldn't get it loose. Shut down waiting on orders.

8-26-89 Pick up 105 1" rods, catch fish try to jar pump free. Backed off rods @ 4025' (rods twisted off). POH and TIH with 160 1" rods and fishing tool to catch 3/4" rod body. Couldn't catch fish. POH pick slips to catch 5/8" rod. TIH couldn't catch fish. POH. Shut down waiting on tools.

8-27-89 Pick up 20' fishing extention, couldn't catch fish. POH think tbg collapsed. TIH with 2" fishing tool, catch fish, try to back off rods got 4" of rod in fishing tool. TIH with fishing tool. Try to back off rods, twisted rods off. POH got 6" of 3/4" rod. SHFD.

8-28-89 Sunday no work

8-29-89 Rig up Dia-Log. Cut tubing with chemical cutter at 4018'. Didn't seem to cut tbg off. Ran Dai-Log free point. Tubing free @ 3946' partially stuck @ 4003' and completely stuck at 4008'. Ran Dia-Log string shot to back off tbg. @ 3038'. Tubing backed off at 427'. POH changed 2-7/8" collar. TIH screw into tbg, ran chemical cutter. Cut tbg @ 3945'. POH pick up 6 3-3/4" drilling collars, overshot, oil and bumper jars. TIH catch fish, jar tbg loose in 6 licks with jars. POH. SDFD.

8-30-89 Pick up fishing tool. TIH. Jar fishing tool through tight spot. Catch fish, pull anchor to tight spot and jar anchor through tight spot. POH stripping out rods and tubing.

8-31-89 Pick up 4-5/8" swedge. TIH to 4013' swedge out tight spot. Swedge would drag 16,000# pulling through tight spot. TOH pick up 4-3/4" swedge. TIH swedge casing out from 4013' to 4030'. Swedge would drag 16,000# over weight pulling through it. POH lay down swedge, collars and jars. SDFD.

9-01-89 Pick up Model R Packer, hydrotest tubing to 6000#'s blew up 21 joints. Set packer with 15,000# compression.

9-02-89 Lay down 1" rods, pick up 2" rod pump. TIH space out pump, hang well on. Unit pulling hard, release PKR and move it down the hole 2', reset PKR and hang well on.

9-06-89 Rig down and move off location.

9-08-89 3.25 BOPD 78.09 BWPD 96% B.S.&W.

9-09-89 3.58 BOPD 75.99 BWPD 95½% B.S.& W.

9-12-89 3.10 BOPD 74.31 BWPD 96% B.S.&W

9-14-89 3.08 BOPD 73.95 BWPD 96% B.S. &W.

10-04-89 2.93 BOPD 70.14 BWPD 96% B.S. &W.

10-13-89 Rig up rig. POH with rods and pump. Tbg. stuck. Shut down.

10-14-89 Rig up wire line truck. Run free point, tubing stuck at PKR 5606'. Ran chemical cutter in hole, cut tbg at 5595'. POH with tbg, pickup overshot, bumper jars, oil jars and 6 3-3/4" drill collars. TIH catch fish, jared and work PKR loose, kept hanging up in casing collars, pull through bad spot in casing. S.D.F.D.

10-15-89 Finish coming out of hole with fish, pick up 4" csg gun to perforate, wouldn't go through tight spot in casing. Pick up 2-1/8" E-jet perforating gun. Perforate A-4 Zone 5628'-32' and 5636'-40', 4 hole per foot. Pick up Retrievable Bridge Plug and PKR. TIH to 4012' wouldn't go through bad spot in csg. POH put a jt of tbg between Bridge Plug and PKR. TIH B.P. still wouldn't go through bad spot in csg. SDFD.

10-16-89 Sunday no work.

10-17-89 Lay rods down and lay down 1700' tbg.

CORE ANALYSIS REPORT

FOR

MURPHY CORPORATION

EAST POPLAR UNIT NO. 17 WELL

EAST POPLAR FIELD

ROOSEVELT COUNTY, MONTANA

CORE LAB

PETROLEUM RESERVOIR ENGINEERING

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

April 17, 1953

REPLY TO
1020 PATTERSON BLDG.
DENVER, COLORADO

Murphy Corporation
1125 University Building
Denver, Colorado

Attention: Mr. Gordon Kirby

Subject: Core Analysis
East Poplar Unit No. 17 Well
East Poplar Field
Roosevelt County, Montana

Gentlemen:

Diamond conventional cores from the subject well in the Madison formation have been sampled and quick-frozen by a representative of Core Laboratories, Inc., and later analyzed in our Williston, North Dakota laboratory. Results of the analysis are presented in tabular and graphical form on the attached Coregraph and Special Analysis Core Report. Water base mud was used as the drilling fluid.

Madison formation analyzed from 5615 to 5640 feet is interpreted to be water productive where permeable.

Formation analyzed from 5739.5 B-1 to 5746.0 feet and from 5757.5 B-2 to 5764.0 feet is interpreted to be oil productive where permeable.

Formation analyzed from 5890 to 5899 feet is interpreted to be low capacity oil productive. Formation from 5899 to 5908 feet is interpreted to be oil productive.

Recovery estimates for the zones, 5739.5 to 5764.0 and from 5901 to 5908 feet, are given on page one.

We hope these data prove beneficial in the evaluation of this well.

Very truly yours,

Core Laboratories, Inc.

J. D. Harris (JH)

J. D. Harris,
District Engineer

JDH:ma

FORM F-11A

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS

Page 1 of 1
File FL 25-317 S & FC
Well East Poplar Unit No. 1

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

CORE SUMMARY

FORMATION NAME	Madison	Madison		
DEPTH, FEET	5739.5-5764.0	5901.0-5908.0		
% CORE RECOVERY	100	100		
FEET OF PERMEABLE, PRODUCTIVE FORMATION RECOVERED	13.0	7.0		
AVERAGE PERMEABILITY MILLIDARCYS	Max.: 3.0 90°: 1.3	2.3		
CAPACITY — AVERAGE PERMEABILITY X FEET PRODUCTIVE FORMATION	Max.: 39 90°: 17	16		
AVERAGE POROSITY, PERCENT	7.7	12.5		
AVERAGE RESIDUAL OIL SATURATION, % PORE SPACE	19.0	27.9		
GRAVITY OF OIL, °A.P.I.	41	41		
AVERAGE TOTAL WATER SATURATION, % PORE SPACE	46.6	26.6		
AVERAGE CALCULATED CONNATE WATER SATURATION, % PORE SPACE	46.6	26		
SOLUTION GAS-OIL RATIO, CUBIC FEET PER BARREL (1)	20	20		
FORMATION VOLUME FACTOR—VOLUME THAT ONE BARREL OF STOCK TANK OIL OCCUPIES IN RESERVOIR (1)	1.04	1.04		

CALCULATED RECOVERABLE OIL

{ Prediction dependent upon complete isolation of each division. Structural position of well, total permeable thickness of oil zone and drainage area of well should be considered.

BY NATURAL OR GAS EXPANSION, BBLS. PER ACRE FOOT (2)	81	182		
INCREASE DUE TO WATER DRIVE, BBLS. PER ACRE FOOT	112	238		
TOTAL AFTER COMPLETE WATER DRIVE, BBLS. PER ACRE FOOT (3)	193	420		

Core Laboratories, Inc.

J. D. Harris

NOTE:

(*) REFER TO ATTACHED LETTER.

(1) REDUCTION IN PRESSURE FROM estimated SATURATION PRESSURE TO ATMOSPHERIC PRESSURE.

(2) AFTER REDUCTION FROM ORIGINAL RESERVOIR PRESSURE TO ZERO POUNDS PER SQUARE INCH.

(3) RESERVOIR PRESSURE MAINTAINED BY WATER DRIVE AT OR ABOVE estimated ORIGINAL SATURATION PRESSURE.

(4) NO ESTIMATE FOR GAS PHASE RESERVOIRS.

PRINTED IN U. S. A.
103 3.25 15M 10-52

Jo. Well One STAGE NO.

DOWELL INCORPORATED

TREATMENT NO.

TREATMENT REPORT

DISTRICT # 2 STATION WILLISTON, N. DAK DATE 3, 1953

OWNER Murphy Corp LEASE E.P.H. WELL NO. 17
POOL East Poplar COUNTY Roosevelt STATE Montana
LOCATION Sec 2-28N-61E OWNER'S REPRESENTATIVE Frank Darsey

WELL DATA

FORMATION Charles "B" & "C" Zone
PAY-FROM 5738 TO 5908
PRESENT TOTAL DEPTH 5908 P. B. FROM —

PIPE DATA—
CASING SIZE 8 5/8" WT. 18#
CASING DEPTH 5890 SKS. CEMENT 200
LINER SIZE — WT. —
LINER DEPTH-FROM — TO —
LINER DESCRIPTION —
TUBING SIZE 2" EUE DEPTH 5881
PACKER-TYPE Baker Anchor DEPTH 5870
PACKER FURNISHED BY OPERATOR YES DOWELL

COMPLETION DATA—
DATE New CABLE TOOL
ROTARY YES DRILLING FLUID Mud
SIZE OPEN HOLE

PERFORATING DATA OR PAY ZONES

SHOTS/FT.	FROM	TO
4	5738	5746
4	5757	5761
aH	5890	5908

PRODUCTION—

	OIL	WATER	G. O. R.
INITIAL			
PRESENT			

ACIDIZING. SHOOTING AND LOGGING RECORD—

DETAILED RECORD OF TREATMENT

TIME A.M. or (P.M.)	PRESSURE CASING	PRESSURE TUBING	BBLS. OF ACID OUT OF TANKS	BBLS. OF ACID IN FORMATION	BBLS. OF ACID PER READING	BBLS. OF ACID PER MINUTE	REMARKS
2:30	0	0					ARRIVAL AT LOCATION WITH 2000 GALS. OF DOWELL XFW
5:30							START SPOTTING 2466l Acid ON FOAM. FILL 0 BBLS.
5:48	0	600					Acid SPOTTED BLEED 25 BBLS.
							FLUSH 24 BBLS.
5:49	0	0	25	0	0	0	START Acid IN "B" ZONE
5:50			26	1	1	1	DON'T LEAKING SHUT DOWN PUMP
6:07		1250					RESUME PUMPING
6:08		2200	29	3	3	2.0	INCREASE PUMP RATE
6:09		2800	33	7	4	4.0	PUMPING STEADY
6:10		2400	37	11	4	4.0	" "
6:14		2900	50	24	13	3.3	Acid displaced JOB COMPLETE
6:20		1300					SHUT DOWN PRESSURE
				"C" ZONE			
9:40							START bleeding Acid To bottom
10:00		1100	22	0	0	0	Acid SPOTTED. SET TREE
10:14							START Acid IN FORMATION
10:15		2700	24	2	2	2.0	266l Acid displaced START 24 FLUSH
10:16		2700	28	6	4	4.0	INCREASE PUMP RATE
10:17		2900	32	10	4	4.0	
10:20		2900	48	24	16	8.0	Flush complete
10:23		1600		LEFT LOCATION			SHUT DOWN PRESSURE

IF TREATMENT IS NOT CONVENTIONAL LIMESTONE FORMATION TREATMENT TO INCREASE OIL OR GAS PRODUCTION, STATE PURPOSE OF TREATMENT.

R. Owen
SERVICE ENGINEER

GENERAL OFFICE COPY.

STATION OR DISTRICT MANAGER

PRINTED IN U. S. A.
103 3-25 15M 10-52

For Work Over

STAGE NO.

DOWELL INCORPORATED

TREATMENT NO.

TREATMENT REPORT

DISTRICT #2 STATION WILLISTON N. D. DATE 3-26 19 53

OWNER Murphy Corp LEASE E. Poplar WELL NO. 17
POOL E. Poplar COUNTY Roosevelt STATE Montana
LOCATION Sec 2-28N-51E OWNER'S REPRESENTATIVE Frank Daasen

WELL DATA

FORMATION Charles Zone
PAY-FROM TO
PRESENT TOTAL DEPTH 5908 P. B. FROM

PIPE DATA–
CASING SIZE 5-½" WT. 15.5#
CASING DEPTH 5890 SKS. CEMENT 300
LINER SIZE " WT. "
LINER DEPTH-FROM " TO "
LINER DESCRIPTION
TUBING SIZE 2 1/2" EUE DEPTH 5888
PACKER-TYPE Baker Pkr DEPTH 5870
PACKER FURNISHED BY OPERATOR yes DOWELL

COMPLETION DATA–
DATE CABLE TOOL
ROTARY DRILLING FLUID
SIZE OPEN HOLE

PERFORATING DATA OR PAY ZONES

SHOTS/FT.	FROM	TO
OH	5820	5908

PRODUCTION–

	OIL	WATER	G. O. R.
INITIAL			
PRESENT			

ACIDIZING, SHOOTING AND LOGGING RECORD–

DETAILED RECORD OF TREATMENT

TIME A.M. OR (P.M.)	PRESSURE CASING	PRESSURE TUBING	BBLS. OF ACID OUT OF TANKS	BBLS. OF ACID IN FORMATION	BBLS. OF ACID PER READING	BBLS. OF ACID PER MINUTE	REMARKS
							1000 Sel x 500
1:00							ARRIVAL AT LOCATION WITH 2000 GALS. OF DOWELL XFW
2:04							START 2266l Sel To bottom
2:12							Sel on formation
2:13							START Sel IN formation
2:14	700	2600	24	2	2	2.0	266l Sel in form.
2:17	700	2700	38	16	14	4.7	
2:18	700	2800	42	20	4	4.0	
2:19	700	2800	46	24	4	4.0	all Sel displaced start Acid in form
2:20		2900	51	29	5	5.0	
2:22		2900	61	39	10	5.0	
2:28		2600	94	72	33	5.5	all acid in Tbg START 246bl flush
2:33		2600	118	96	24	4.8	all flush pumped Job Complete
2:35		1000					Shut down PRESSURE

FILL 0 BBLS.
BLEED 0 BBLS.
FLUSH 24 BBLS.

LEFT LOCATION

IF TREATMENT IS NOT CONVENTIONAL LIMESTONE FORMATION TREATMENT TO INCREASE OIL OR GAS PRODUCTION, STATE PURPOSE OF TREATMENT.

B. Dean
SERVICE ENGINEER

STATION COPY.

STATION OR DISTRICT MANAGER

STIMULATION TREATMENT REPORT

DWL-494-J PRINTED IN U.S.A.

DOWELL
WELL DIVISION OF THE DOW CHEMICAL COMPANY

DATE: 7/9/72

WELL NAME AND NUMBER: East Poplar unit #17	LOCATION:	CUSTOMER REPRESENTATIVE: MR. O'Brien	TREATMENT NUMBER: 1-05-02-7385
POOL:	FORMATION: MAdison River	JOB DONE DOWN: TUBING [X] CASING B [ ] ANNULUS C [ ]	ALLOWABLE PRESSURE: TBG: CSG:
COUNTY: Roosevelt	STATE: Montana	TYPE OF WELL: OIL A [X] GAS B [ ] WATER C [ ] INJ. D [ ]	
TYPE OF SERVICE: acidize		AGE OF WELL: NEW WELL A [ ] REWORK [X]	TOTAL DEPTH: CIRC. BHT.
CUST. NAME: Murphy oil Corp.		CASING SIZE: 5 1/2	CASING DEPTH: TUBING SIZE: 2 3/8 TUBING DEPTH:
ADDRESS: Murphy Bldg.		LINER SIZE: LINER DEPTH:	PACKER TYPE: BAKer PACKER DEPTH: 5706
CITY, STATE & ZIP CODE: EL Dorado, Arkansas 71730		OPEN HOLE: CSG.OR ANRL.VOL.:	TBG VOLUME: 22 STATIC BHT:
REMARKS:			

PERFORATED INTERVALS

DEPTH	NO. OF HOLES	DEPTH	NO. OF HOLES	DEPTH	NO. OF HOLES
5738-5742					

FOR CONVERSION PURPOSES 24 BBLS EQUALS 1000 GALLONS

ARRIVED ON LOCATION:

TIME	INJECTION RATE	INJECTION BBLS IN	PRESSURE CSG.	PRESSURE TBG.	SERVICE LOG
					Rig up Pump Safety meeting
10:00			200		pressure Casing to 200 psi
10:25					Start 18 BBl acid
10:30	3	17		1200	17 BBl acid pumped catch pressure
					Stop pump fix leak at well head
11:00	.2	22	1000	3800	22 BBl pumped acid on perfs.
11:22	1	44	1000	2800	44 BBl Pumped acid displaced
11:25	1	49	1000	2800	49 BBl pumped 5-BBl overflush in formation
					Stop Pump Job Complete
					ISIP 15 min
					2800
					MAX Rate 1 MAX psi 3800
					Min Rate .2 Min psi 2800
					AVG Rate .7 Avg psi 3300
					Total load 49 BBl

TIME LEFT LOCATION	AVG. LIQUID INJ. RATE	ADJ. INJ. RATE (SOLIDS INCL)	TOTAL FLUID PUMPED: OIL / WATER
12:00		.7	
MAX. PRESSURE	AVG. PRESSURE	FINAL PUMP IN PRESSURE	SHUT IN PRESSURE: IMMEDIATE / 15 MINUTES
3800	3300	2800	

PROPS AND LIQUIDS INJECTED

TYPE	SIZE OR PURPOSE	AMOUNT
750 gal 15%		
5 D-160		
[redacted]		
2 gal CI-35		

DOWELL LOCATION:

DOWELL ENGINEER:

CALL BACK	DATE	CUSTOMER REP. CONTACTED	CUSTOMER CONSIDERED SERVICE: [ ] SATISFACTORY [ ] UNSATISFACTORY [ ] UNKNOWN	PROD. BEFORE TREATMENT: TEST / ALLOWABLE	PROD. AFTER TREATMENT: DAYS: TEST / ALLOWABLE

HALLIBURTON

JOB LOG FORM 2013 R-4

CUSTOMER	WELL NO.	LEASE	JOB TYPE	DATE	PAGE NO.	TICKET NO.
Murphy Oil [illegible]	17	E [illegible] unit	P T A	[illegible]-1-9[illegible]	1	[illegible]

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
								on loc
								Safety meeting
1	0910	1 0				1000		[illegible] rate
			50	1				[illegible]
	[illegible]	1½	[illegible]	1		1000		[illegible]
			22	1				[illegible]
		20		1		[illegible]		[illegible]
	[illegible]							[illegible] SK [illegible]
								[illegible] Top
								[illegible]
								[illegible]
								Lay down [illegible]
	[illegible]							[illegible]
								[illegible]
		[illegible]	[illegible]	1		[illegible]		[illegible]
			[illegible]			[illegible]		[illegible]
			1					[illegible]
		1½	[illegible]			[illegible]		[illegible]
								[illegible]
								Job complete
	[illegible]							Thank you

CUSTOMER

HALLIBURTON

HALLIBURTON ENERGY SERVICES

FORM 1911 R-10

TICKET CONTINUATION

DUNCAN COPY

TICKET No. 585636

CUSTOMER	WELL	DATE	PAGE	OF
Murphy Oil Company	E P U 17	May-11-94	2	1

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC	ACCOUNTING ACCT	ACCOUNTING DF	DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
504-043	516.00272				Premium Cement	155	sx			8 80	1,365 00
500-207					SERVICE CHARGE			CUBIC FEET 155		1 35	209 25
500-306					MILEAGE CHARGE / TOTAL WEIGHT 14,570 / LOADED MILES 78			TON MILES 568.23		95	539 80
										CONTINUATION TOTAL	2114 07

No. B 232048

HALLIBURTON ENERGY SERVICES

FORM 1906 R-12

COPY

CHARGE TO: Murphy Oil

ADDRESS

CITY, STATE, ZIP CODE

TICKET No. 551194 - 6

PAGE 1 OF 1

SERVICE LOCATIONS	WELL/PROJECT NO.	LEASE	COUNTY/PARISH	STATE	CITY/OFFSHORE LOCATION	DATE	OWNER
1. Williston	EPU #17	EPU	Roosevelt	Mt		5-12-94	Same
2.	TICKET TYPE: ☒ SERVICE ☐ SALES	NITROGEN JOB? ☐ YES ☒ NO	CONTRACTOR: H+H Well	RIG NAME/NO.: 3	SHIPPED VIA	DELIVERED TO	ORDER NO.
3.	WELL TYPE: 01	WELL CATEGORY: 06	JOB PURPOSE: 626			WELL PERMIT NO.	WELL LOCATION: Land
4.							
REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING LOC	ACCT	DF	TIME	DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
						MILEAGE						
750500				26	11:00	Service Charge	1	day			900 -	900 -
757600				26	12:30	Jet cutter depth charge	1030	ft	min		30	600 -
757601				26	12:30	Jet cut 5½ casing	1	tech			760 -	760 -
757600				26	13:30	Jet cutter depth charge	900	ft	min		30	600 -
757601				26	13:30	Jet cut 5½ casing	1	tech			760 -	760 -

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY,** and **LIMITED WARRANTY** provisions.

CUSTOMER OR CUSTOMER'S AGENT SIGNATURE: X Gerald Hagedorn

DATE SIGNED: 5-12-94 TIME SIGNED: 11:00 ☒ A.M. ☐ P.M.

I ☐ do ☒ do not require IPC (Instrument Protection). ☐ Not offered

SUB SURFACE SAFETY VALVE WAS: ☐ PULLED & RETURN ☐ PULLED ☐ RUN

TYPE LOCK | DEPTH

BEAN SIZE | SPACERS

TYPE OF EQUALIZING SUB. | CASING PRESSURE

TUBING SIZE | TUBING PRESSURE | WELL DEPTH

TREE CONNECTION | TYPE VALVE

SURVEY	AGREE	UN-DECIDED	DIS-AGREE
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?	✓		
WE UNDERSTOOD AND MET YOUR NEEDS?	✓		
OUR SERVICE WAS PERFORMED WITHOUT DELAY?	✓		
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?	✓		

ARE YOU SATISFIED WITH OUR SERVICE? ☑ YES ☐ NO

☐ CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL	3620 -
FROM CONTINUATION PAGE(S)	
Less 65% discount	2353 -
SUB-TOTAL APPLICABLE TAXES WILL BE ADDED ON INVOICE	1267 -

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

CUSTOMER OR CUSTOMER'S AGENT (PLEASE PRINT)	CUSTOMER OR CUSTOMER'S AGENT (SIGNATURE)	HALLIBURTON OPERATOR/ENGINEER	EMP #	HALLIBURTON APPROVAL
Gerald Hagedorn	X Gerald Hagedorn	Paul Bartholomew	D5845	

JOE' CASING & DRILLING, INC.

P.O. Box 969
Williston, ND 58802-0969

SHIPPED TO	
ADDRESS	
CITY & STATE	
CARE OF	
(LEASE)	[illegible]
(WELL NO.)	17
(FIELD)	E [illegible]
(RIG)	[illegible]
INVOICE TO	Murphy Oil USA Inc
ADDRESS	
CITY & STATE	

MT

CUSTOMER ORDER NO.	ORDERED BY	DATE
	[illegible]	5-12-94

CUSTOMER REQUISITION NO.	TAKEN BY	FILLED BY
	[illegible]	[illegible]

ORDERED VIA

SHIPPED VIA

SPECIAL INSTRUCTIONS

DATE	DESCRIPTION	UNITS	UNIT PRICE	AMOUNT
5-12-94	1 man crew and power			
	unit to help pull 1000'			
	of 5½ casing			
	Rental on 5½ elevators			
	Rental on 5½ [illegible] and slips			
	Rental on 5½ [illegible] tongs			
	Agreed price - $750.00			750.00
		CITY COUNTY	TAX	
			STATE TAX	

SERVICES PERFORMED BY [illegible signature]

REPRESENTATIVE

Thank You Mr. [illegible signature]

APPROVED BY

COMPANY NAME

TOTAL $750.00

DT NO. № 815

INVOICE NO.

DATE

HALLIBURTON

HALLIBURTON ENERGY SERVICES

FORM 1906 R-13

CHARGE TO: Murphy Oil Company

ADDRESS

CITY, STATE, ZIP CODE

COPY

TICKET No. 585636 - 7

PAGE 1 OF

SERVICE LOCATIONS	WELL/PROJECT NO.	LEASE	COUNTY/PARISH	STATE	CITY/OFFSHORE LOCATION	DATE	OWNER
1. Williston	17	[illegible] unit	[illegible]	ND		5-12-97	[illegible]
2.	TICKET TYPE ☒ SERVICE ☐ SALES; NITROGEN JOB? ☐ YES ☒ NO	CONTRACTOR: [illegible] Service	RIG NAME/NO.	SHIPPED VIA	DELIVERED TO: Loc.	ORDER NO.	
3.	WELL TYPE: 01	WELL CATEGORY: 06	JOB PURPOSE: 115 [illegible]		WELL PERMIT NO.	WELL LOCATION: Land	
4.							
REFERRAL LOCATION	INVOICE INSTRUCTIONS						

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	LOC	ACCT	DF	DESCRIPTION	QTY.	U/M	QTY.	U/M	UNIT PRICE	AMOUNT
000-117		1			MILEAGE pump TRK	156	mi	Rd Trip		2 75	429 00
009-019		1			pump charge	3962	FT				2410 00
001-037		1			Additional Hours	1	Hr			300 00	300 00

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CUSTOMER OR CUSTOMER'S AGENT SIGNATURE

X [signature]

DATE SIGNED 5-12-97 TIME SIGNED 0800 ☒ A.M. ☐ P.M.

I ☐ do ☐ do not require IPC (Instrument Protection). ☐ Not offered

SUB SURFACE SAFETY VALVE WAS: ☐ PULLED & RETURN ☐ PULLED ☐ RUN

TYPE LOCK	DEPTH	
BEAN SIZE	SPACERS	
TYPE OF EQUALIZING SUB.	CASING PRESSURE	
TUBING SIZE	TUBING PRESSURE	WELL DEPTH
TREE CONNECTION	TYPE VALVE	

SURVEY	AGREE	UN-DECIDED	DIS-AGREE
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?			
WE UNDERSTOOD AND MET YOUR NEEDS?			
OUR SERVICE WAS PERFORMED WITHOUT DELAY?			
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?			

ARE YOU SATISFIED WITH OUR SERVICE? ☐ YES ☐ NO

☐ CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL	
FROM CONTINUATION PAGE(S)	2114 67
SUB-TOTAL APPLICABLE TAXES WILL BE ADDED ON INVOICE	

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowleges receipt of the materials and services listed on this ticket.

CUSTOMER OR CUSTOMER'S AGENT (PLEASE PRINT)	CUSTOMER OR CUSTOMER'S AGENT (SIGNATURE)	HALLIBURTON OPERATOR/ENGINEER	EMP #	HALLIBURTON APPROVAL
Gerald Hagadone	X [signature]	[signature]	[illegible]	

HALLIBURTON ENERGY SERVICES

JOB SUMMARY

HALLIBURTON DIVISION: [illegible]
HALLIBURTON LOCATION: Williston
BILLED ON TICKET NO.: [illegible]

WELL DATA

FIELD: F [illegible] SEC. 2 TWP. 28N RNG. 71E COUNTY: [illegible] STATE: MT

FORMATION NAME ______ TYPE ______
FORMATION THICKNESS ______ FROM ______ TO ______
INITIAL PROD: OIL ______ BPD. WATER ______ BPD. GAS ______ MCFD
PRESENT PROD: OIL ______ BPD. WATER ______ BPD. GAS ______ MCFD
COMPLETION DATE ______ MUD TYPE ______ MUD WT. ______
PACKER TYPE ______ SET AT ______
BOTTOM HOLE TEMP. ______ PRESSURE ______
MISC. DATA ______ TOTAL DEPTH ______

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING	U	15.5	[illegible]	KB	[illegible]	
LINER						
TUBING	1	6.5	2 7/8	KB	[illegible]	[illegible]
OPEN HOLE						SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

JOB DATA

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 5-12-97	DATE 5-12-97	DATE 5-12-97	DATE 5-12-97
TIME 0430	TIME 0800	TIME 0910	TIME 1000

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
FLOAT COLLAR		
FLOAT SHOE		
GUIDE SHOE		
CENTRALIZERS		
BOTTOM PLUG		
TOP PLUG		
HEAD		
PACKER		
OTHER		

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
Robert L Helseth	[illegible]	Williston
[illegible]	7570	
E. [illegible]	50316 [illegible]	"

MATERIALS

TREAT. FLUID ______ DENSITY ______ LB/GAL.-°API
DISPL. FLUID ______ DENSITY ______ LB/GAL.-°API
PROP. TYPE ______ SIZE ______ LB. ______
PROP. TYPE ______ SIZE ______ LB. ______
ACID TYPE ______ GAL. ______ % ______
ACID TYPE ______ GAL. ______ % ______
ACID TYPE ______ GAL. ______ % ______
SURFACTANT TYPE ______ GAL. ______ IN ______
NE AGENT TYPE ______ GAL. ______ IN ______
FLUID LOSS ADD. TYPE ______ GAL.-LB. ______ IN ______
GELLING AGENT TYPE ______ GAL.-LB. ______ IN ______
FRIC. RED. AGENT TYPE ______ GAL.-LB. ______ IN ______
BREAKER TYPE ______ GAL.-LB. ______ IN ______
BLOCKING AGENT TYPE ______ GAL.-LB. ______
PERFPAC BALLS TYPE ______ QTY. ______
OTHER ______
OTHER ______

DEPARTMENT: Cmt
DESCRIPTION OF JOB: P T A

JOB DONE THRU: TUBING ☑ CASING ☐ ANNULUS ☐ TBG./ANN. ☐

CUSTOMER REPRESENTATIVE X [signature]

HALLIBURTON OPERATOR: Robert L Helseth COPIES REQUESTED ______

CEMENT DATA

STAGE	NUMBER OF SACKS	CEMENT	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.
1	55	Prem		B	neat	1.15	15.8
2	100	"		"	"	1.15	15.8

SUMMARY

PRESSURES IN PSI

CIRCULATING ______ DISPLACEMENT ______
BREAKDOWN ______ MAXIMUM 2250
AVERAGE ______ FRACTURE GRADIENT ______
SHUT-IN: INSTANT ______ 5-MIN ______ 15-MIN. ______

HYDRAULIC HORSEPOWER

ORDERED ______ AVAILABLE ______ USED ______

AVERAGE RATES IN BPM

TREATING ______ DISPL. ______ OVERALL ______

CEMENT LEFT IN PIPE

FEET ______ REASON ______

VOLUMES

PRESLUSH: BBL.-GAL. 5 TYPE Fw
LOAD & BKDN: BBL.-GAL. ______ PAD: BBL.-GAL. ______
TREATMENT: BBL.-GAL. ______ DISPL: BBL.-GAL. [illegible]
CEMENT SLURRY: BBL.-GAL. 11 26 20.78
TOTAL VOLUME: BBL.-GAL. ______

RAMARKS

[illegible]

FORM 2025-R3

CUSTOMER

PRODUCTION &
INJECTION DATA

RECORD OF PLUGGING & ABANDONMENT

Lease and Well No.: East Poplar Unit No. 17

Field: East Poplar County: Roosevelt State: Montana

Well Location: SE SE Section 2,, T28N, R51E

STATUS PRIOR TO ABANDONMENT:

Date Completed: March 1953 Date of Last Workover: 8-1989

TD: 5907½' Cumulative Production: B-1 & 2 Zone 239,153 BO 764,073 BW B-1, 2 & C Zones 92,025 BO 1,376,779 BW

JUSTIFICATION FOR ABANDONMENT:

This well was originally completed in the B-1, B-2 and C-Zone which watered out. There is a bad spot in the casing at 4013'. This well is not part of the East Poplar Unit and the lease has expired. The well location is on the east side of the field and would not be a good location for a SWD well.

SUMMARY OF ABANDONMENT:

5-09-94 Move in and shut down.

5-10-94 Rig up. 525 psi on tubing and 500 psi on casing. 15 BO flowed off. Pull tubing and ran gauge ring to 4015'. OK Shut down.

5-11-94 300# on tubing bled off. Pick up PKR T.I.H. set PKR at 3101'. Rigged up to swab.

Run 1 - 0 - 1000' 60% oil 40% mud
2 - 1000 - 2000' 40% oil 60% mud & water
3 - 2000 - 3000' 20% oil 80% mud & water
4 - 2500 - 3000' 100% mud & water wait 1 hour
fluid level at 600' 90% mud & water
6 - 1600 - 2600' 95% mud & water wait 1 hour
1000 - 2000' 95% mud & water
8 - 2000 - 3000' 95% mud & water
9 - 2500 - 3100' 98% mud & water

Swab 75 barrels total fluid.

5-12-94 Pick up cement retainer and set at 3962'. Mix 55 sks. cement pump 50 sacks into retainer. Pull up and spot 5 sacks on top. Pull 2 stands roll hole with 10# water. P.O.H. with tubing. Rig up wire line tried to cut csg at 1030' didn't cut. Ran another cutter and cut csg off at 900'. Layed down casing. Run tubing to 1020' and pump 100 sacks cement. Finish laying down tubing.

5-13-94 Rig down move off location.

5-14-94 Ran 40' 1" pipe pump 15 sack plug @ surface

5-16-94 Tag cmt @ 5'

Elk #17

10-13-89 Rig up Rig P.O.H. with rods & pump Tbg stuck
$600 Shut down

10-14-89 Rig up wire line truck run free point
tubing stuck at pkr 5606' Run chemical
7837 cutter in hole cut tbg @ 5595 P.O.H. with
600 tbg pick up ovoshot bumper jars oil jars
$437 & 6 3¾ drlg collars T.I.H. catch fish jared &
work pkr loose Kept Hanging up in csg collars
pull thru bad spot in csg S.D.F.D.

10-15-89 Finish out of hole with Fish pick up 4"
csg gun to perforate wouldn't go thru tight
4624 spot in csg pick up 2½" E-jet perforating gun
perforate A-4 zone 5628-32 & 5636-40 4
12461 holes per foot pick up Ret B.P. & PKR T.I.H. to
4012' wouldn't go thru bad spot in csg P.O.H.
put a jt of tbg between B.P. & PKR T.I.H.
B.P. still wouldn't go thru bad spot in csg
S.D.F.D.

10-16-89 Sunday no work

10-17-89 Lay rods down & Lay down 1700' Tbg

17

8-24-89 (20) Mi Rupel try to unseat pump couldn't get it Loose back off of rods @ 2625' rig up To pull Tbg couldn't release anchor run in hole with rods screw in to rods [illegible] body well on unit try to unseat pump with unit pulled threads on rod @ 2625' P O H with rods. S D F D   Rig = 912.50

8-25-89 (21) Try to work anchor free couldn't get it Loose shut down waiting on orders.

Rig 337.50
Total $1,250

8-26-89 (22) pick up 105 1" rods catch Fish try to Jar pump free backed off rods @ 4025' (rods twisted off) P.O.H. T.I.H with 100 1" rods Fishing tool to catch 3/4" rod body couldn't catch fish P O H pick slips to catch 5/8 rod T.I.H. couldn't catch Fish P.O.H S.D.W.O.T.   Rig 1258

prev 1250
Total = 2308

8-27-89 (26) Pick up 20' Fishing extention (could) catch Fish P.O.H. Think Tbg collapsed T.I.H. 2" Fish tool catch Fish catch Fish try to back off rods got 4" of rod in Fishing Tool. T.I.H with Fishing tool Try to back off rods Twisted rods of P.O.H. got 6' of 3/4" rod. S.D.

Rig $1513
prev 2308
$ 3821

8-28-89 Sunday no work

17

8-29-89 Rig up Dia-log cut Tbg with chemical cutter at 4016 didn't seem to cut Tbg off Run Dia-Log Free Point Tbg Free @ 3946' partially stuck @ 4003' + completely stuck @ 4005' Run Dia-Log string shot to back off Tbg @ 3038' Tbg backed off @ 4127' P.O.H. change 2 7/8 collar T.I.H. screw into Tbg Run chemical cutter Cut Tbg @ 3945' P.O.H. pick up 6 3/4" only collars over shot oil + bumper jars T.I.H. catch Fish jar Tbg Loose in 6 Licks with jars P.O.H. SDFD

Rig 1513
Tools 4025
Dialog 3089
#8627
prev 3821
Total 12,448

8-30-89 Pick Fishing tool T.I.H. jar Fishing tool thru tight spot ~~catch Fish~~ pull anchor to Tight spot ~~jar thru hole~~ P.O.H. out hole stripping out rods & Tbg.
+ Jar anchor thru tight spot

Rig 1315
Tools 2000
Trucking 190
Roustabout 400
3905
previous 12448
Total 16353

8-31-89 Pick up 4 5/16" swedge T.I.H to 4013' swedge out tight spot swedge would drag 16,000' pulling thru tight spot T.O.H. pick up 4 3/4" swedge T.I.H. swedge csg out from 4013' to 4030' swedge would drag 16000' over weight pulling thru it P.O.H. Lay down swedge, collars + jars. SDFD.

Rig-1028
Tools 2515
#3543

Prev 16353
3543
19896

#17

9-1 89 Pick up [illegible] PKR Hydro-Test tbg. to [illegible] blow up [illegible] set pkr [illegible] compression

Rig 1155

Hydrotest 1064

2519

[illegible] 19896

22415

Lay down 1" rods

9-2-89 pick up [illegible] rod pump [illegible] space out pump hang on [illegible] release pkr & move it down [illegible] 2' reset pkr & hang on

Rig 1,315

prev 22,415

23,730

9-6-89 Rig down & move off #222

Total 23,952